# Anaxagoras of Clazomenae

## *Fragments* and *Testimonia*

A TEXT AND TRANSLATION
WITH NOTES AND ESSAYS BY
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# ABBREVIATIONS

I have used the following abbreviations and short references for standard texts and reference works. Full information may be found in the Bibliography.

| | |
|---|---|
| CAG | Berlin Academy series *Commentaria in Aristotelem Graeca* (Berlin: Reimer 1882–1909). |
| DG | Diels *Doxographi Graeci*. |
| DK | Diels and Kranz, eds *Die Fragmente der Vorsokratiker*. |
| *In Phys.* | Simplicius' *Commentary on Aristotle's Physics*, in CAG. |
| KRS | Kirk, Raven, and Schofield *The Presocratic Philosophers*, 2nd edition. |
| Lanza | Lanza *Anassagora: Testimonianze e Frammenti*. |
| LSJ | Liddell, Scott, and Jones, eds *A Greek-English Lexicon*. |
| OCD | *The Oxford Classical Dictionary*. |
| OCT | Oxford Classical Texts series. |
| Schaubach | Schaubach *Anaxagorae Clazomenii Fragmenta quae supersunt omnia*. |
| Schofield | Schofield *An Essay on Anaxagoras*. |
| Sider | Sider *The Fragments of Anaxagoras*. |
| TLG | *Thesaurus Linguae Graecae*, a comprehensive digital library of Greek literature, with a searchable database to be found at http://ptolemy.tlg.uci.edu/ |

Abbreviations for ancient works follow LSJ and OCD, although there are occasional expansions for ease of recognition. Except where noted, I have followed DK for the texts of the fragments and testimonia of the Presocratics, and the editions in the Oxford Classical Texts series for Plato and

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# INTRODUCTION

There was an illustrious man from Clazomenae, Anaxagoras the physicist ...
Strabo, *Geography* 14, A7

Anaxagoras of Clazomenae held views that, even in the context of early Greek thought, seem strange. He claimed, for instance, that everything is in everything and that 'of the small there is no smallest, but always a smaller.' He was famous for asserting that the cosmos is directed by Mind, and notorious for insisting that the moon is a stone and the sun a piece of red-hot burning iron. His account of the formation of the cosmos apparently allows for other worlds where 'there are sun and moon and the other heavenly bodies for them, just as with us.' He was reportedly the first of the early Greek philosophers to settle in Athens, he was a friend of Pericles, and the Athenians prosecuted him for impiety.

The present volume is an introduction to the philosophy of Anaxagoras. Following the pattern of the Phoenix Presocratics Series, it aims to make Anaxagoras and his ideas accessible to modern readers through translations of the ancient Greek and Latin texts and by providing explanatory notes and interpretive essays. Any account of Anaxagoras has to rely on two sorts of evidence. In ancient lists of authors and their works, Anaxagoras almost always appears with those who wrote only one book; that book (like all the works of the early Greek philosophers) is lost to us, but fragments survive as quotations in the works of others, notably Simplicius and Sextus Empiricus.[1] There has been much debate among scholars about the use-

1 Scholars dispute the extent and accuracy of the quotations; the Notes on the Fragments address the most important of these problems. More general discussions can be found in the works referred to in The Ancient Sources for Anaxagoras.

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smallness or the largeness of any ingredient (B3 and B6). Essay 3 explores these claims, arguing that they are grounded in Anaxagoras's metaphysical commitments, and are a crucial aspect of a theory that is both respectful of Eleatic arguments about the nature of reality and that can explain apparent coming-to-be and passing-away. Understanding why Anaxagoras insists on the everything-in-everything principle as well as the principle of unlimited smallness and largeness, we can interpret these principles in ways that diminish their mystery, make them plausible, and show their importance for the integrated theory that Anaxagoras has worked out.

The indefinitely extended mixture of all things is set in motion by *Nous* (Mind), and Anaxagoras's theory of *Nous* was famous throughout the ancient world. (According to Diogenes Laertius, Anaxagoras was nicknamed '*Nous*.') Yet Anaxagoras was also ridiculed by both Plato and Aristotle for making no real use of his Mind once it had set the mass of ingredients in motion. Essay 4 examines Anaxagoras's concept of *Nous*: what *Nous* does in the system, how it rules and controls all things (including the rotation), what it knows, and why it must have that knowledge. I conclude that *Nous*, too, is a fundamental part of Anaxagoras's cosmology, and argue that Anaxagoras uses his *Nous* in ways that may have not been fully appreciated by his critics, both ancient and modern.

Most of the surviving fragments from Anaxagoras's book deal with the original mixture, the processes of separation and mixture, the formation of the cosmos through the action of *Nous*, and the nature of *Nous* itself. Yet some of the fragments and many of the testimonia attest to the extraordinary range of Anaxagoras's interests, and to his explanations of the formation of the cosmos, and of the nature and motions of the heavenly bodies (from the nature of the stars to the motions of the planets, to explanations of comets, meteors, and eclipses). He attempted to explain various weather phenomena and earthquakes, why the sea is salty and how fish breathe, the nature of plants, and problems in embryology. Perception and knowledge also interested Anaxagoras: he explored how sensation occurs and to what extent perception can provide us with knowledge. Essay 5 explores Anaxagoras's cosmological, astronomical, meteorological, biological, and epistemological views, focusing on how those views are connected with Anaxagoras's philosophical accounts of what there is. I argue that aspects of Anaxagoras's theories (that the stars are burning rocks, for instance) can be traced to his account of the formation of the cosmos through the revolving motion instigated by *Nous*, and that his account of knowledge shows that although our senses are inadequate for determining truth on their own, through the use of our own minds (the *nous* in us), we can come to a better understanding of the world we inhabit.

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axagoras calls 'the smaller' mind (such as mind in human beings or in other entities), I use lower case.

**Homogeneous stuffs**: These are Aristotle's 'like-parted' (homoiomerous) things. Aristotle attributes a view about these to Anaxagoras, and the Aristotelian commentators follow him in using this language in discussing Anaxagoras. This has led to some interpretative difficulties, which I discuss in Essay 1.

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**B1**

Anaxagoras says that the homogeneous stuffs, unlimited in amount, are separated off from a single mixture, with all things being in everything but each being characterized by what predominates. He makes this clear in the first book of the *Physics*, when he says at the beginning, 'All things were together, unlimited both in amount and in smallness, for the small, too, was unlimited. And because all things were together, nothing was evident on account of smallness; for air and aether covered all things, both being unlimited, for these are the greatest among all things both in amount and in largeness.'

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**B2**

And a little later: 'for both air and aether are separated off from the surrounding mass, and what is surrounding is unlimited in extent.'

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**B3**

For in fact Anaxagoras says directly at the beginning of the book that [the ingredients] were unlimited: 'all things were together, unlimited both in amount and in smallness' [B1], and that there is neither a smallest nor a largest among the first principles: 'Nor of the small is there a smallest, but always a smaller (for what-is cannot not be) – but also of the large there is always a larger. And [the large] is equal to the small in extent (*plēthos*), but in relation to itself each thing is both large and small.' For if everything is in everything and if everything is separated off from everything, then from what seems to be the smallest something yet smaller than that will be separated off, and what seems to be the largest was separated off from something larger than itself.

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**B4b**

And again, he says, 'Before there was separation off, because all things were together, there was not even any colour evident; for the mixture of all things prevented it, of the wet and the dry and of the hot and the cold and of the bright and the dark, and there was much earth present and seeds unlimited in number,[6] in no way similar to one another. For no one of the others is similar to another. Since these things are so, it is right to think that all things were present in the whole.' And this whole would be the one being of Parmenides.

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**B5**

He makes clear that none of the homogeneous stuffs either comes to be or passes away, but that they are always the same, by saying: 'Even though these things have been dissociated in this way, it is right to recognize that all things are in no way less or more (for it is impossible that they be more than all), but all things are always equal.' He says these things, then, about the mixture and the homogeneous stuffs.

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**B6**

Elsewhere, too, he also says this: 'Since the shares of the large and the small are equal in number, in this way too, all things will be in everything; nor is it possible that [anything] be separate, but all things have a share of everything. Since it is not possible that there is a least, it would not be possible that [anything] be separated, nor come to be by itself, but just as in the beginning, now too all things are together. In all things there are many things present, equal in number, both in the greater and in the lesser of the things being separated off.'

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6 The clause 'and there was much earth present . . . ' is notoriously difficult. See the Notes.

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**B10**

When Anaxagoras discovered the old belief that nothing comes from that which is not in any way whatsoever, he did away with coming-to-be, and introduced dissociation in place of coming-to-be. For he foolishly said that all things are mixed with each other, but that as they grow they are dissociated. For in the same seminal fluid there are hair, nails, veins and arteries, sinew, and bone, and it happens that they are imperceptible because of the smallness of the parts, but when they grow, they gradually are separated off. 'For how,' he says, 'can hair come from what is not hair, and flesh from what is not flesh?' He maintained this, not only about bodies, but also about colours. For he said that black is in white and white in black. And he laid down the same thing with respect to weights, believing that light is mixed with heavy and vice versa.

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**B11**

And he says clearly, that 'in everything there is a share of everything except *Nous*, but there are some things in which *Nous*, too, is present.'

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**B12**

And he says clearly, that 'in everything there is a share of everything except Nous, but there are some things in which Nous, too, is present' [B11]. And again that . . .

He has written the following about Nous: 'The other things have a share of everything, but *Nous* is unlimited and self-ruling and has been mixed with no thing, but is alone itself by itself. For if it were not by itself, but had been mixed with anything else, then it would partake of all things, if it had been mixed with anything (for there is a share of everything in everything just as I have said before); and the things mixed together with it would thwart it, so that it would control none of the things in the way that it in fact does, being alone by itself. For it is the finest of all things and the purest, and indeed it maintains all discernment (*gnōmē*) about everything and has the greatest strength. And *Nous* has control over all things that have soul, both the larger and the smaller. And *Nous* controlled the whole revolution, so that it started to revolve in the beginning. First it began to revolve from a small region, but it is revolving yet more, and it will revolve still more. And *Nous* knew (*egnō*) them all: the things that are being mixed together, the things that are being separated off, and the things

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**B15**

And a little later: 'The dense and the wet and the cold and the dark came together here, where <the> earth is now; but the rare and the hot and the dry <and the bright> moved out to the far reaches of the aether.'

---

**B16**

He says that those fundamental forms and the simplest things are separated off, and he says that other things that are more composite than those are sometimes compacted as compounds are, and are sometimes separated off as the earth is. For he says the following: 'From these, as they are being separated off, earth is compacted; for water is separated off from the clouds, and earth from the water, and from the earth stones are compacted by the cold, and these stones move farther out than the water.'

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**B17**

Anaxagoras says clearly in the first book of the *Physics* that coming-to-be and passing-away are combining and dissociating, writing this: 'The Greeks do not think correctly about coming-to-be and passing-away; for no thing comes to be or passes away, but is mixed together and dissociated from the things that are. And thus they would be correct to call coming-to-be mixing-together and passing-away dissociating.'

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**B18**

Thus, in his talk, our friend earned approval when he demonstrated this saying of Anaxagoras, that 'The sun places the light in the moon.'

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PART TWO

# Notes on the Fragments and Testimonia

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**Unlimited (ἄπειρον).** There are six occurrences of this term in the fragments, three of them in B1. It is often translated 'infinite,' especially in Zeno and later Greek philosophy, but here in Anaxagoras it is most likely to have a less technical mathematical meaning. 'Unlimited' is a literal translation, as would be 'indefinite.' Anaxagoras claims that there are no limits on the number and extent of the original ingredients (B1, B2, B4b), that there is no lower limit on smallness (B1), and that *Nous* is not limited in any way (B12). His use of the notion recalls the *apeiron* of Anaximander and unlimited air in Anaximenes. The principle of everything in everything is a fundamental part of his theory, and as a corollary he must maintain that there are no limits on the extent, amount, or degree of mixture of the basic ingredients. He claims that no matter how great the amount of each ingredient we might think there is, there is more than that; no matter how large the mass of the mixture seems to us to be, it is larger than that; no matter how small or submerged in the mix an ingredient is, it can be yet smaller, or submerged yet more.

**Smallness, the small; largeness, the large.** Like 'thing,' smallness (and largeness) function in at least two ways in the fragments. Sometimes, small and large refer to size; in other cases, as here, Anaxagoras refers to the degree of submergence in or emergence from the background mixture.[5] In the original mixture, nothing is evident because everything is so thoroughly mixed together that nothing stands out against the background. So, nothing discrete is (or would be) discernible. This is not because the ingredients are small in size (what sense could we make of a small piece of the hot?), but because they are thoroughly blended. Later in the fragment, Anaxagoras claims that **air and aether are the greatest . . . both in amount (*plēthos*) and in largeness**. Thus, he says both that there is more of these ingredients than any other, and that because of their great quantity they are large with respect to the other ingredients. Aether is the upper layer of the atmosphere, the light upper air.[6] Air (*aēr*) itself is dark, dense, and mist-like, while aether is less dense and brighter. So, overwhelming all the other ingredients, aether and air are semi-emergent from the mix, forming a blend that would prevent any possible perceiver from discriminating the other things in the mix. Air and aether are also mixed with each other, and so, while their prevalence in the mixture prevents other things from being distinguished, neither of them is discriminable from the other. This

5 Here I adopt a version of an interpretation of large and small that was developed (independently) by Inwood ('Anaxagoras') and Furth ('Hero'). There is a fuller discussion in Essay 3.

6 Aristotle suggests that Anaxagoras conflated aether and fire (see A43), but while *pur* (fire) does not occur in the fragments, Aristotle may be correct.

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**For what-is cannot not be.** The text in the parenthesis, giving the reason why there is always a smaller, is controversial. DK print *τὸ γὰρ ἐόν οὐκ ἔστι τὸ μὴ οὐκ εἶναι* and this is apparently the reading in all the manuscripts (at least there are no variants in the apparatus to DK, in Diels's edition of Simplicius's *Commentary* on book 1 of the *Physics*, or in Schaubach's text); this is an unusual (but not impossible) construction, and I leave it as written.[13] Anaxagoras's claim is that what-is must be; it cannot become what-is-not. Here he follows Parmenides B2.3, where the first route of inquiry is described: *ἡ μὲν ὅπως ἔστιν τε καὶ ὡς οὐκ ἔστι μὴ εἶναι* (the one, that [it] is and that it cannot not be). The difficulty comes from the presence of *τό* and the unusual *μὴ οὐκ εἶναι*. The double negative *μὴ οὐκ* follows the assertion of negative possibility; see, for instance, Smyth 2745, 2746, and especially 2749, where Smyth asserts that 'instead of *μὴ οὐ* we also find *τὸ μὴ οὐ*' with an infinitive depending on a negated verb; in 2749d, Smyth cites Xenophon (*Hellenica* 5.2.36) and Plato (*Soph.* 219e); at 2744.10 he cites Plato (*Phil.* 13a) for similar uses. As Wright notes, 'the construction reads more easily' if we adopt Schofield's deletion of the second *τό*, but this may not be strictly necessary.[14] Zeller suggested converting *τὸ μή* to *τομῇ*; adding <*μή*> gives *τὸ γὰρ ἐόν οὐκ ἔστι τομῇ* <*μή*> *οὐκ εἶναι*, accepted by Sider and translated by him 'For that which is cannot be cut away to nothing.'[15] This would apparently make Anaxagoras aware of Zeno's arguments about divisibility and responding to them. Nevertheless, not only does the emendation not supply an argument against Zeno, Anaxagoras does not seem to be concerned with the paradoxical aspects of division that Zeno exploits; moreover, there is still no argument here about why what-is cannot be cut away to nothing and so why there is no smallest but always a smaller.[16] What we seem to need is exactly the claim in the text: it is impossible that what-is should ever not be. That claim covers more than the possibility of what-is being cut away to nothing, for it also disallows the wholesale removal of an ingredient from a region of the mix or its possible ultimate disappearance by being overcome by indefinitely large amounts of other ingredients (see Essay 3). Further, Diels notes (II.31)

13 For a discussion of the apparent difficulties of the text as printed, see Schofield 156–57 n. 15. Defenders of the manuscript text (with various translations and interpretations) include Lanza, Guthrie, Jöhrens, Raven, Stokes, and Wright (*Presocratics*).

14 See Wright *Presocratics* 124; Schofield 80 and 156–57 n. 15.

15 Both Cornford (*Plato* 56 n. 1; 'Matter' 278) and Jöhrens (who ultimately rejects the emendation; 19) argue that the <*μή*> is necessary for good grammatical sense.

16 As it stands, this is not a reasoned response to Zeno's arguments about division, but simply a retort. For a full discussion of the issue of Zeno and Anaxagoras, see Schofield 80–82 with notes. See also Strang, and Furley 'Response' 60–62.

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Anaxagoras may well be following Parmenides and Melissus.[24] Δοκεῖν, here translated 'to think' can also mean 'to suppose' or 'to believe.' All three of these terms can suggest a weak epistemic state of supposition or 'mere belief,' as we might perhaps say. Nonetheless, having combined it with the modal claim, Anaxagoras here means something epistemically robust: on the basis of the evidence one ought to think (i.e., it would be wrong not to think) what follows.

**In everything that is being combined (ἐν πᾶσι τοῖς συγκρινομένοις).** Another specialized use of a *krinō* verb. The things that are being combined are put together from the ingredients that are separated off (*ἀποκρίνεσθαι*) from the original mix or that are freed up when another aggregated or combined thing (a temporary mixture) is dissociated (*διακρίνεσθαι*). The use of the present tense reinforces the point that being separated out, combined, and dissociated are processes that continue indefinitely, as does the mixture of all in all.

**There are many different things present.** Everything that is combined (these are the natural artefacts) contains a mixture of all the basic ingredients.[25] Anaxagoras's claim is literally that there are 'many and varied' things (*πολλά τε καὶ παντοῖα*) present in combined things, but B1 together with B3 and B6 will show that everything is in everything.

**Seeds of all things having all sorts of forms, colours, and flavours**. In addition to the stuffs and opposites, there are seeds of living things in the mixture as well. Some commentators take the *καί* (*and*) as epexegetical (as having the force of '*that is to say*'), showing that all the things in the mix serve *as though* they were seeds for all things. I do not think that this is correct. Although Anaxagoras is interested in questions of nutrition and growth, that interest is secondary to and dependent on his metaphysical commitments to Eleatic principles of 'no coming-to-be' and 'no passing-away.' The materials in the original mix will produce stuffs and the natural features of the world such as rocks, mountains, rivers, and stars, but Anaxagoras may have felt the need to explain structured living things as well. The seeds deal with that problem. The seeds are growth

24 Parmenides uses forms of *χρή* and *χρεών ἐστι* throughout his poem (see, for instance, B1.29, B1.32, B2.5, B6.1, B8.11, B8.54). In Melissus, see B3, B5, B7, B8 (3 times). Mourelatos *Route* 277–78 discusses the question of the translation of *χρή* and *χρεών ἐστι* in Parmenides and other early Greek writings.

25 I use the oxymoron 'natural artefacts' to stress that compounded things (plants, human beings, and other animals) are not genuine realities in Anaxagoras's theory. Rather, they are the things that are put together from and are dissociated into the things that are in the processes that we call coming-to-be and passing-away (see B17). Fuller discussion of these claims can be found in the Essays, especially Essays 2 and 3.

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what they grow into (as we should, see Essay 2), there will still be enough differences among the seeds (even those of the same species) to justify Anaxagoras's claim that no seed is like any of the others.

**Since these things are so, it is right to think that all things were present in the whole.** In translating *ἐνεῖναι* as I do, I follow Strang, Furley, Schofield, Barnes, and Sider. As at the beginning of B4a, Anaxagoras argues that one ought to think or believe something on the basis of evidence. Here (unlike the case of B4a) we actually have the evidence: the mixture that constitutes the beginning state contained 'all things.' If we detach the last sentence from the rest of B4b and treat it as an independent fragment, we lose the evidence for the claim.[30] Simplicius gives Diels's version of B4b as a continuous quotation at *in Phys.* 34.21–26, and adds 'and this whole would be the one being of Parmenides.' Although Simplicius is wrong about equating Anaxagoras's original mix with a 'One Being' in Parmenides, the original ingredients are Parmenidean basic entities. Anaxagoras has just enumerated these ingredients in a shorthand way, stressing the presence of seeds and the stuffs and opposites that allow them to grow into living things. On these grounds, Anaxagoras can claim to have shown that everything was ultimately included in the whole that constitutes the original mix. Even those things that will be mixed together or compounded from the ingredients, as in B17, can be said to have been present in some sense, as their ingredients (including the seeds) were part of the mixture. (See Essays 2 and 3.)

## B5 The ingredients of the original mixture constitute the total of what there is in the world; they are subject to a principle of conservation

*Even though these things have been dissociated in this way, it is right to recognize that all things are in no way less or more (for it is impossible that they be more than all), but all things are always equal.*

**These things have been dissociated**. The referent of 'these things' is unclear. Simplicius quotes B5 only once, after B4a and B4b, and his introduction of the quotation does not say where it was in the original (except that the introduction to the whole series of passages indicates that they came from what Simplicius calls the first book of the *Physics*). The presence of a form of *διακρίνεσθαι* (to be dissociated) suggests that Anaxagoras is not talking about the separation off of ingredients from the

30 See Schofield 42, who notes this and detaches the sentence, claiming that the proffered conclusion is 'too tenuously linked with the paragraph (Fragment 4b) which it is made to conclude in Diels-Kranz.'

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### B7 On the unlimitedly many things in the original mix

*. . . so as not to know the extent of the things being separated off, either in word or in deed.*

**The things being separated off.** Both Simplicius's evidence in the context of the fragment and the use of *τὰ ἀποκρινόμενα* show that Anaxagoras is talking about the ingredients in the original mixture. Because the original context is unknown (there is only the one fragmentary quotation in Simplicius' commentary on *De Caelo*), Anaxagoras's meaning is unclear. That the ingredients are unlimited is asserted in other fragments (see B1, B2, B4b); here Anaxagoras stresses that their exact number and extent are beyond human comprehension.[36]
**Extent.** πλῆθος covers both the unlimited number of kinds of things in the mix and the unlimited quantity of those things.
**Word or deed.** Sider states that this version of the phrase, 'with *λόγος* (rather than [the Homeric] *ἔπος*) and datives occurs in extant literature first in Anaxagoras' (115). We can neither count nor apprehend purely by thought the indefinite number of things that separate off. The use of the phrase 'word or deed' stresses the human scale; although cosmic *Nous* can know the extent of the ingredients and their natures (see B12), such comprehension is beyond human ability.

### B8 Complete segregation of any ingredient into a pure instance is impossible; all things are together not only in the original mixture but also now

*The things in the one kosmos have not been separated from one another, nor hacked apart with an axe – neither the hot from the cold nor the cold from the hot.*

**The things.** Although he does not reserve *chrēmata* for the ingredients, using it for both ingredients and those things mixed together or compounded from them after they begin to separate off (e.g., in B17), Anaxagoras here uses the neuter plural definite article, which is more indefinite than *chrēmata*. He may desire to emphasize that the complete mixture of the original state continues even as the cosmic rotation causes separation off.
**In the one *kosmos*.** The phrase *ἐν τῷ ἑνὶ κόσμῳ* might indicate Anaxagoras's explicit commitment to a single world.[37] Whether or not Anaxagoras posits different regions of separation, there is but a single mass of mixed

36 Although he maintains that we cannot comprehend the *plēthos* of the contents of the original mixture, Anaxagoras does not adopt a broad scepticism. See Essays 4 and 5.
37 See, for instance, Guthrie 2:313.

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four of the extant fragments: B11, 12, 13, and 14. It is usually translated 'mind,' but it is not clear that Anaxagoras's notion is best captured by that single word.[44] *Nous* is a rational moving principle, so in some cases the presence of *Nous* explains why the thing in question has a mind; in others, it is merely the motive quality of *Nous* that is present. In all cases, the presence of *Nous* is adduced to account for ordered change and repeatability. Finally, in the case of the great *Nous* that begins and controls the rotation bringing about the ordered universe, Anaxagoras conceives of a supreme principle of order that may or may not be divine. In this, he is like Heraclitus, for whom *Logos* is a supreme principle of order and shares in some of the traditional attributes of the divine. The ordering principle, as both mover of the world and as intelligence that pervades it, guarantees the intelligibility of the universe. Aristotle thought that Anaxagoras failed to distinguish clearly between soul and mind (*De Anima* 1.2, A100; in A55 he says that 'Anaxagoras assigns knowing and moving to the same principle'); the evidence of B11 and B12 supports Aristotle.

***Nous* is present in some things.** Although *Nous* is not subject to the everything-in-everything principle, it is present to some things, although here we are not told what things contain *Nous*. In B12 Anaxagoras says that *Nous* controls all things that have soul, and this suggests that it is therefore in those things. The phrase in B12 is 'as many as have soul.' That

44 Menn, for instance, claims that in such assertions as appear in B12 (that *Nous* ordered and knew all things) the term is best understood to mean 'rationality itself' or 'rationality as such' (Menn 28). He says that 'for Anaxagoras the "abstraction" of rationality is a substance just as concrete as air or fire or gold, present within all rational beings' (28). This is all part of what Menn deems Anaxagoras's 'decidedly archaic' world picture (27). It seems to me that it is an open question whether *Nous* is the same sort of thing as gold or air or fire (see the note on B12 on the fineness and purity of *Nous*). Moreover, while it is clear that *Nous* is a rational principle, and that *nous* in human beings is connected with our being rational creatures, it is less clear that the presence of *nous* in plants and other animals (as many as have soul) should be understood as the presence of rationality in them or that this rationality is present to them as an ingredient in just the same way as wood or water is an ingredient. Menn does not directly address the question of what it means for a plant to have *nous* in it, other than to deny that it means that the plant has 'a soul capable of participating in prudence'; rather, he says, 'it is clear that Anaxagoras thinks that rationality controls Socrates or the sun or a tree and produces regular patterns of motion in them – not by being present in their souls but by being present in their bodies' (28–29; italics omitted). Anaxagoras nowhere says this: he neither equates soul and *nous* nor denies a connection between them; he simply says in B12 that *Nous* has control over 'as many as have soul,' and says in B11 that *Nous* is in some things. Menn asserts that there are portions of *Nous* in things, which have them by participating in *Nous* (26–27). But, again, Anaxagoras nowhere uses participation or portion language in talking about *Nous*; in B11 and B12 he stresses that the presence of *Nous* in things is different from the presence of ingredients (and that difference is not merely one of quantity, as Menn suggests on p. 26).

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put its knowledge and powers of control to work in bringing about order and arrangement through the rotation. Just as in the preceding claim, where what *Nous* knew is enumerated, so here too Anaxagoras lists what *Nous* arranges in order to show that its ordering is both pervasive and comprehensive: it set in order 'Whatever sorts of things were going to be, indeed whatever sorts were and now are not, and as many as are now and whatever will be.' The inclusion of past, present, and future is traditional, but should not be taken to mean that Anaxagoras allows the possibility of genuine coming-to-be or passing-away.[59] The things that were, are, or will be are the natural artefacts that result from the combination and separation of the basic ingredients. These mixtures are inherently temporary. Anaxagoras's point is that insofar as these are arrangements of ingredients produced in an orderly fashion by the revolutions begun by *Nous*, they owe this order to the action of *Nous*. Once more Anaxagoras stresses that the universe is not a random collection of items, but a *kosmos*, an ordered arrangement, whose order can be traced to *Nous*.

**And *Nous* also ordered this revolution** ... We have just had a general statement of the ordering power of *Nous*; Anaxagoras now turns to one way in which that power is at work. 'This revolution, in which the things being separated off now revolve, the stars and the sun and the moon and the air and the aether' refers both to the large general rotation that began in the original motion imparted by *Nous* and that Anaxagoras has already mentioned, and to that part of the rotation apparent to us in which we see the heavenly bodies that move in our heavens. The general reference here to the things being separated off (*οἱ ἀποκρινόμενοι*) recalls that it is the rotating motion that causes the first separations, probably of air and aether, from the original mixed mass of ingredients (see B1 and B2). The continued rotation causes the formation of the heavenly bodies, and Anaxagoras's specific reference to the fact that '*Nous* arranged *this* revolution' (*διεκόσμησε νοῦς ... καὶ τὴν περιχώρησιν ταύτην*) in which the stars and the sun and the moon '*now* (*νῦν*) revolve' could perhaps be a reference to our particular world as opposed to those other areas of the revolution that might also contain local ordered worlds (as suggested in B4a).

**The revolution made the separation off.** Once again Anaxagoras reminds us that *Nous* is ultimately responsible for the cosmos: it begins the revolution that causes the separation off of ingredients from the original mix. This revolution produces the large masses of air and aether, the heavenly bodies, and the other contents of the world.

59 See Sider's comments on the traditional tripartite division (138).

**The opposites separate off from one another.** A consequence of the revolution is the separating off of the opposites from one another: the dense from the rare, the warm from the cold, the bright from the dark, and the dry from the moist. These are the same items that are enumerated in B15 and (with the exception of dense/rare) in B4b. These are not the only opposites, but they seem to be the ones that are most prevalent and efficacious in our cosmos. Even though the revolution causes their separation from each other, Anaxagoras will quickly remind us that this separation is only partial; there will never be complete separation off into volumes of pure and unmixed ingredients.

**There are many shares of many things; only *Nous* is completely separated.** The principle of the mixture of all things in all things is referred to obliquely by the claim that there are many shares (*μοῖραι*) of many things. This is a reference to B11, and the early part of B12, where we are told that there is a share of everything in everything. The other mention of shares, in B6, offers a proof that because there are just as many shares in the small as in the great, so everything is in everything. This point appears again here: none of the ingredients can be completely separated off from the original mix (*ἀποκρίνεται*), nor dissociated apart into a pure unmixed state from a later mixture (*διακρίνεται*). Saying that there is no separation 'one from the other' (*ἕτερον ἀπὸ τοῦ ἑτέρου*) reminds us of the original mixture, the principle of which is maintained through the everything-in-everything principle. The sentence ends simply: 'except *Nous* (*πλὴν νοῦ*)' stressing yet again that only *Nous* is completely pure and unmixed.

**All *Nous* is alike, both the greater and the smaller.** The purity of *Nous* guarantees that all of it is pure, unmixed, and alike, unlike other things, which always contain shares of everything else. The greater and smaller here may refer either to the *Nous* in larger or smaller living things, or perhaps to the larger or smaller strengths or concentrations of *Nous*: (great) cosmic *Nous* as opposed to (small) *nous* in living things.[60]

60 Sider says, 'The words "larger and smaller" ... make it clear that Anaxagoras is concerned with spatial uniformity,' adding that 'although *ὅμοιος* by itself does not = "homogeneous," the sentence as a whole makes this claim for *Nous*' (140). Sider's argument is that in the absence of a word such as Aristotle's coinages 'homoiomeries' and 'homoiomerous,' one can say that something is homogeneous only through 'the statement that any piece of any size is (exactly) like any other.' Parmenides B8.22 is an obvious counterexample: 'Nor is it divisible, since it is all alike (*οὐδὲ διαιρετόν ἐστιν, ἐπεὶ πᾶν ἐστιν ὁμοῖον*).' Sider notes the phrase in Parmenides, but implies that this is a special case, a use involving 'a boundless entity such as Parmenidean Existence, for which there can be no external comparandum' (ibid.). *Nous* would seem to be just such an entity, and it seems to me that Anaxagoras is here recalling Parmenides' use to make it clear that

**Nothing else is all alike; characters in mixed objects are determined by varying concentrations or densities of ingredients.** Having just said that all *Nous* is alike, Anaxagoras now contrasts it with the other things in the mix. None of them is unmixed, and so no example of a mixed thing is exactly like any other sample of a mixed thing.[61] Anaxagoras contrasts *Nous* and the ingredients in the mix: because everything partakes of a share of everything, no ingredient occurs, has occurred, or will occur in a separate, pure, unmixed state. The things that emerge from the mixture, either through separation off and the mingling of like with like, or from being mixed together from the separated ingredients, acquire their various characters from the predominance of certain ingredients. So, a lump of gold is a collection of ingredients in which gold has a higher density than other similar ingredients (such as flesh). Nevertheless, this lump of gold is not exactly like that lump of gold. A human being can be said to be made of flesh and blood because these occur in higher densities than other things (such as gold), but each lump of flesh may have different ratios of ingredients. What matters is that gold, or flesh and blood, predominate in each local mixture. I feel warm when there is more hot than cold in the mixture that I am, and I feel chilled as the hot is overcome by the addition of more cold. It is this claim at the end of B12 that supports the attribution to Anaxagoras of a so-called 'principle of predominance.'[62]

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*Nous* is indeed homogeneous, unlike the mass of the other basic entities, the ingredients, which are always mixed together.

61 The text as given in DK reads ἕτερον δὲ οὐδέν ἐστιν ὅμοιον οὐδενί, 'nothing is like anything else.' Some scholars have suggested that this does not bring out the proper parallel with *Nous*, since not being like anything else does not entail a denial of homogeneity, and sits awkwardly between the claims that all *Nous* is alike and that a thing's characters are determined by the predominant ingredients. One suggested solution is to delete οὐδενί, with the resulting text then saying that 'nothing else is all alike.' This makes the contrast with *Nous* much clearer, and justifies the addition of the next claim, 'but each one is and was most manifestly those things of which there are the most in it,' by showing how the predominance of ingredients in a local mixture establishes characteristics. Nevertheless, Simplicius gives these lines three times (at *in Phys.* 157.3–4, 165.14–15, and 172.18–19), and includes οὐδενί in all three quotations. The suggestion appears in Wasserstein, and is accepted by Barnes (*Presocratic* 626 n. 22), Wright (*Presocratics* 131), and Waterfield (127). In correspondence, Schofield argued against changing the text. On his interpretation (see chap. 1 of his *Essay*), the point of the end of B12 is to assert that *all* of *Nous* is *all alike*, whether it is cosmic *nous* or *nous* in a living thing of no matter what physical size. This contrasts with everything else: every instance of something that is mostly gold differs from every other in some way. This is equivalent to the interpretation that I suggest here.

62 See Kerferd, Graham ('Postulates').

**How should we conceive of Anaxagoras's *Nous*?** The attribution to *Nous* of supreme control and comprehensive knowledge raises the question of whether Anaxagoras is concerned with a single, divine intelligence or mind, or with the nature of any mind, including human minds.[63] The statements about *Nous*' power, control, and knowledge of all things suggest that Anaxagoras's first concern in B12 is with a rational principle that pervades the universe and could be identified with a supreme mind that arranges the processes of the natural world. This *Nous* is not a creator, for the ingredients are themselves metaphysically basic and neither come to be nor pass away, and the processes of separation off and recombination are produced by the combination of the whirling motion and the natures of the ingredients. Yet, as the intelligent instigator of the revolution, cosmic *Nous* can well be said to control the development of the cosmos.[64] The superlative degree of awareness and intelligence that Anaxagoras attributes to this *Nous* suggests that he is not here thinking of *nous* in us. We possess neither all knowledge nor all control. Nevertheless, because *Nous* is in the things that have soul, and because Anaxagoras says that *Nous* is all alike (at the end of B12), we must assume that human minds and intelligence are similar to the *Nous* that drives the cosmos.[65] As noted above, I take the 'all alike' claim to apply to the separateness and pure nature of *Nous*, without a commitment to the claim that *nous* is exactly the same in the content of its knowledge or the extent of its activity in every being that has it. Thus, Anaxagoras can allow for the differences between *nous* in human beings and other living things, and differences in intelligence and understanding among humans.[66] I do not think that this is a difference that

63 For a discussion of the issue, see Schofield 3–22. See also the note on B11, above.

64 On the claim that *Nous* is not a creator, see Louguet. Simplicius stresses the role of *Nous* as cause, even though its causality is indirect, in the context to B13 (*in Phys.* 300.27ff.).

65 Aristotle suggests that Anaxagoras reached his conclusions about cosmic *Nous* from an argument by analogy with the role of *nous* in living things (*Met.* 1.3 984b15ff.; A58).

66 A101a of the Testimonia might be read as suggesting that even in us *Nous* could have supreme knowledge and control, if only we would use it properly: 'Anaxagoras does not assign *nous* in the sense of practical wisdom to all human beings; not because they do not have *nous* in them, but because they do not always use it' (Psellus). I suspect that Anaxagoras was concerned with the question of what differentiates minds and degrees of awareness in different species of living things, or between different individuals in the same species. See the reasonable conclusions on this reached by Schofield 20–22. Menn claims that 'once we see that *nous* means not mind but rationality, the total body of rationality of which we each possess a portion (although this portion is not our "mind")' there is no problem about the differences between *nous* in the cosmic sense and *nous* in

should be attributed to the *amount* of *Nous* in something. If one person understands more than another one because of the amount of *Nous* she has, then would not one understand even more by increasing the supply of *nous* that one has? One might think that learning is analogous to growth; yet there are difficulties with this account. I become larger by adding flesh and blood to my body through nutrition, wiser by having *nous* added . . . to what? And through what process? Could I make a dog as rational as a human being by increasing its amount of *nous*?

### B13 Once *Nous* begins the rotation, separation off and the breaking up of the mass of ingredients proceeds

*When Nous began to move [things], there was separation off from the multitude that was being moved, and whatever Nous moved, all this was dissociated; and as things were being moved and dissociated, the revolution made them dissociate even more.*

***Nous* began to move things.** This passage, together with B12, suggests that the mass of ingredients was motionless before *Nous* initiated the rotation. This is supported by Simplicius at *in Phys.* 1123.21 (A45), who says that all the things that are were at rest for an unlimited period of time before 'cosmos-making' *Nous* put motion into them.

**Separation off and dissociation occur in whatever *Nous* moves.** In B17 Anaxagoras says that the dissociation (διακρίνεσθαι) of a mixed item is what ordinary people call 'passing-away,' and the use here suggests that the speed and force of the rotation (see B9) cause the dissociation of the mass of ingredients. Once that mass has been broken, separation off of ingredients begins, and clumps of like ingredients begin to form.[67]

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us (Menn 73, n. 7). I am not sure that this solves the distribution problem, especially if, as Menn asserts, *nous* is corporeal.

67 Some scholars, including Diels and Guthrie, reject the impersonal construction and translation of ἀπεκρίνετο as given here, and take *Nous* as the subject. Guthrie translates: 'After Mind initiated motion, it began to withdraw from all that was moved, and all that Mind moved was divided' (2:274). Guthrie, following Heidel, says that this is confirmed by B12, but it seems to me that it is inconsistent with both B12 and B14. B12 indeed says that *Nous* is unlike the other things, which all have a share of each other, but that does not imply that *Nous* withdraws from the cosmos (after all, B11 asserts that *Nous* is in some things). Sider argues that, 'first, *Nous* never was part of anything else, and so could not have separated from that which it had the power to move. Second, the impersonal, particularly of *krinō*-words is altogether regular in Anaxagoras; look no further than line 5 of this fragment' (143). Finally, B14 confirms the ever-present status of *Nous* in the cosmos.

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## B15 The consequences of the rotation: the formation of the earth and the heavens

*The dense and the wet and the cold and the dark came together here, where <the> earth is now; but the rare and the hot and the dry <and the bright> moved out to the far reaches of the aether.*

**The dense ... the dark; ... the rare ... <the bright>.** This fragment explains the structure of the cosmos within the whirl, and explains the movements of various stuffs once they have begun to separate off as a result of the rotation. The list of opposites matches B12 in including the dense and the rare (see B4b where they are absent). This suggests that neither list is intended to be exhaustive. Sider adds *καὶ τὸ λαμπρόν* for the sake of symmetry, and there is no reason not to do so. B15 has been used as evidence for attributing to Anaxagoras an austere ontology that limits the basic ingredients in the original mixture to the opposites, but although only opposites are mentioned here, we need not think that only the opposites were in the original state of 'all things together' (see Essay 2). The passage can be interpreted as saying that anything that is predominantly cold, wet, dense, dark, etc., can be found together (iron ore in our Earth, for instance).
**Came together here ... moved out.** As might be expected, the denser stuffs (things that are dense, wet, cold, dark) are moved into the centre by the force of the rotation, while the lighter and brighter stuffs move out. The Anaxagorean stuffs behave the same way as grains and chaff in a winnowing basket, or, more precisely, in the centrifugal motion caused by whirling a ladle or bucket (see Tigner 'Ladle'). This is a case where present phenomena can give a hint of the great unseen cosmic processes (see B21a).
**Where the earth is now.** In DK, Diels had printed <*ἡ γῆ*>, with a note that this was an addition in the Aldine edition of Simplicius (published in 1526). Sider discovered by an examination of manuscripts that *γῆ* is present in all of them.[71] As noted above, the Earth on which we live is composed of ingredients that are primarily dense, dark, wet, and cold. This would include earth as a stuff, and we need not suppose that earth itself, and even our Earth, are composed simply of a collection of these opposites. In the first place, Anaxagoras is here telling us why the Earth is where

71 Sider conjectures that 'at one point <*ἡ*> *γῆ* was written as <*ἡ γῆ*> and never corrected.' As Sider points out, the mistake engendered a 'ghost problem'; the merits of *γῆ* were debated in a number of articles. (Full discussions can be found in Sider 'Confirmation' and *Fragments* 149.)

it is. Not all earthy stuff is on the Earth (see A35, A42.10, and A77 on the character of the moon, etc.), and the Earth itself could be thought of as an artefact composed of ingredients (including earth, water, salts, ores). Second, B15 gives us a general principle about the behaviour of ingredients in the whirl: once the mass begins to move, and ingredients begin to separate off, they will be affected in different ways by the rotation, depending on their degrees of density or rarity, heat or cold, and so on.

### B16 Patterns of change in meteorological phenomena

*From these, as they are being separated off, earth is compacted; for water is separated off from the clouds, and earth from the water, and from the earth stones are compacted by the cold, and these stones move farther out than the water.*

Because of the similarity of the process described here to the theory of Anaximenes, B16 has been taken to be cosmogonical, and concerned with the initial formation of clouds, sea, earth, and stones as the rotation begins and continues. Stokes argues instead that in this fragment Anaxagoras is discussing processes that take place now, and this is probably correct; nevertheless, these will certainly be like those that brought about the present states of the revolution and the cosmos.[72] Barnes follows Stokes's meteorological view and interprets the fragment as belonging to the Ionian tradition of seeing contemporary processes as evidence for the emergence of the various large masses from one another.[73]

**From these (ἀπὸ τουτέων) as they are being separated off earth is compacted.** The referent for the pronoun is unclear. Several commentators take the referent to be the opposites.[74] This part of B16 appears only at *in Phys.* 179.9–10; it follows a quotation of B15, and between the two Simplicius remarks, 'he says that these originating forms and most simple things are separated off, and that other things, more compounded than these, sometimes are compacted like compounds, and sometimes separated off like the earth. For he says the following,' and then he quotes B16. It looks as though Simplicius is using the fragment as support for his claim that some phenomenal things are separated off of the original mass, while others are compacted or mixed (see B17) from them. Later in the fragment

72 Stokes 'On Anaxagoras, Part II'; see also Schofield's comment at KRS 372 n. 1.

73 Barnes *Presocratic* 332. Cf. the 'turnings of fire' in Heraclitus B31a, which might be an example of how roads up and down are the same (Heraclitus B60).

74 See, for instance, Schofield and Wright (*Presocratics* 133), and perhaps Simplicius. Sider (152) takes the referent to be 'clouds.'

Anaxagoras says that earth is separated off from water, and this seems inconsistent with the opening line, especially if we take it to be a reference to B15.

**Water is separated off from the clouds, and earth from the water.** Clouds are probably compacted air, and water certainly separates off from clouds in the form of rain. That earth can be separated off from water is clear from evaporation. There is most certainly influence from Anaximenes here, but it has been filtered by Anaxagoras's knowledge of Parmenides' arguments.

**Stones are compacted from earth by the cold.** Stones are formed when earth is chilled. Here Anaxagoras gives us a process (compacting) and an efficient cause (cold).

**These move farther out than the water.** Another rather mysterious claim. There is evidence that Anaxagoras thought that the whirling motion imparted by the revolution could snatch up stones and ignite them (see A71 and Essay 5). This is apparently not a process that is limited to the formation of the earth and the heavens, but operates continuously and everywhere.

## B17 The Eleatic principle of no coming-to-be and no passing-away; explanation of phenomena

*The Greeks do not think correctly about coming-to-be and passing-away; for no thing comes to be or passes away, but is mixed together and dissociated from the things that are. And thus they would be correct to call coming-to-be mixing-together and passing-away dissociating.*

**The Greeks do not think correctly about coming-to-be and passing-away.** 'The Greeks' is a way of referring to ordinary people who suppose that generation and destruction are genuine processes. They are thus equivalent to the mortals of Parmenides' poem, who think 'that to be and not to be are the same and not the same' (B28.6) or that 'coming-to-be' and 'passing-away' name real processes (cf. 28B8.38–41). See also Empedocles B11, where he calls fools those 'who expect that what was not before comes to be or that something dies and is in every way destroyed.'

**No thing comes to be or passes away.** Anaxagoras's main point is that there is no such thing as genuine coming-to-be and passing-away. Insofar as phenomenal objects, like dogs, trees, and people, are generated and destroyed, they are not real. They are merely temporary emergences from the background mass of ingredients, and are thus natural artefacts and do not figure in the correct account of what is genuinely real in the world. At the deepest level of reality there can be no generation or destruction.

The genuinely real things are the ingredients in the original mixture (and *Nous*). These are metaphysically and epistemologically basic, satisfying the Eleatic requirements for what is.

**Mixture and dissociation (**συμμίσγεταί τε καὶ διακρίνεται**) from the things that are.** It is crucial to see that there are two processes discussed here.[75] These take place at the level of phenomenal objects and are different from the separating off (*ἀποκρίνεσθαι*) that occurs when the mass of original ingredients is set in motion (see note on B2). Mixing occurs when separated off ingredients combine to form a natural artefact; when that natural artefact (such as this dog or that tree) falls apart, it is dissociated and the ingredients can be re-mixed. Because Anaxagoras's universe is a plenum, every separation off will result in a rearrangement, even if what emerges is simply a mass of ingredients in which one or another ingredient predominates, as in iron ore (see B12). The same is true of every dissociation, even if the result of the separation is a mixture of ash or earth produced by burning or decomposition. Thus, the Parmenidean strictures against coming-to-be and passing-away are satisfied, while at the same time Anaxagoras can account for the phenomena of the world as reported by the senses. See also Empedocles B8, where Empedocles makes the same point about the unreality of generation and destruction: '. . . there is only mixing and interchanging of what is mixed.'

**They would be right to call coming-to-be mixing-together and passing-away dissociation.** Anaxagoras aims to correct the thought and usage of ordinary people. Unlike Empedocles (31 B9), he does not himself assent to the customary use of the terminology of coming-to-be and passing-away and seeks to correct those who think and speak that way.

## B18 The light of the moon

*The sun places the light in the moon.*

Like other early Greek philosophers, Anaxagoras apparently provided full accounts of physical phenomena, including astronomy, meteorology, geology, and so on. Little of this has survived, although the reports in the testimonia give us some idea of the broad range of Anaxagoras's views. In saying that the moon gets its light from the sun, Anaxagoras is apparently

75 A number of scholars, missing the role of mixture in Anaxagoras's theory, have underestimated the importance of B17. See Essay 2.

following Parmenides (B14 and 15).[76] Here Anaxagoras says that the sun actually puts brightness into the moon, using *τὸ λαμπρόν*, the same word that appears in his lists of the opposites. Because everything is in everything, there will already be some bright (and dark and wet and earth and bone, etc.) in the ingredients that make up moon, but apparently dark predominates. The sun passes on some of its brightness to the moon.[77]

### B19 The rainbow

*We call the reflection of the sun in the clouds a rainbow.*

The extent of the fragment is disputed. Most scholars now limit the fragment to the passage given here, following Solmsen, who argued that the discussion of the rain (that follows these words) comes from the scholiast who is the source of the fragment, and not from Anaxagoras.[78]

**Reflection of the sun in the clouds.** A literal translation of the Greek would be 'the shining in the clouds opposite the sun.'[79]

**Rainbow.** Iris was the messenger of the gods. Like Xenophanes, who insisted that the rainbow was in reality coloured clouds (B32), Anaxagoras gives a naturalistic explanation of the phenomenon.

### B20

The passage given by Diels as B20 is part of a Hebrew translation of an Arabic translation of Galen's commentary on Hippocrates. There are references to astronomical views held by two people. Moses Alatino, a Renaissance translator took one of the names to be that of Anaxagoras, but, as Sider says, 'an unbeatable team of a Hebraist, an astronomer, and a classicist has determined that both names are transliterations' of *Ἡσίοδος* [Hesiod].[80] The passage is now identified as Hesiod fragment 394.

### B21 The limits of sense experience

*Owing to their [viz., the senses'] feebleness, we are not able to determine the truth.*

This is one of two fragments preserved by Sextus Empiricus, both concerned with perception and knowledge. In the context of this fragment,

76 See Graham 'Lumière' and Graham and Hintz 'Eclipse' for discussion.
77 For a discussion of the authenticity of the fragment, see Sider 158–59.
78 See Solmsen and Sider 160–61.
79 See Sider 161, for discussion of both the translation and what Anaxagoras's explanation might have been.
80 Sider 162.

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# TESTIMONIA

## LIFE

### A1

**Diogenes Laertius, *Lives of the Philosophers* 2.6–15**: (6) Anaxagoras, son of Hegesibulus or Eubulus, was from Clazomenae. He was a pupil of Anaximenes, and he was the first to set mind over matter. His book, which is expressed in a pleasant and high-minded style, begins this way: 'All things were together, and then, when Mind (*Nous*) came, it set them in order.' Because of this, Anaxagoras was nicknamed 'Mind,' and Timon, in his *Satires*, says about him:

They say, I suppose, that Anaxagoras, a valiant hero,
is 'Mind,' because his was the mind that suddenly woke up
and bound together all things that were confused before.

He was notable for his noble birth and for his wealth, and even more for his magnanimity, because he gave away his inheritance to his kin. (7) When they took him to task for neglecting his estate, he said, 'Why then, don't you take care of it?' In the end, he retired and studied nature, giving no thought to public affairs. When someone asked him, 'Have you no care for your country?' he replied, 'Hush, I am very concerned about my country,' and he pointed to the heavens.

Anaxagoras is said to have been twenty years old at the time of Xerxes' invasion, and to have lived for seventy-two years. Apollodorus says in his *Chronicles* that Anaxagoras was born in the seventieth Olympiad and died in the first year of the eighty-eighth. According to Demetrius of Phaleron

in his *List of Archons,* Anaxagoras began to philosophize in Athens during the archonship of Callias [456 BC], when he was twenty.[1] They say that he spent thirty years there.

(8) Anaxagoras held that the sun is a fiery mass of red-hot metal and is larger than the Peloponnese (although some attribute this view to Tantalus), and that the moon has dwelling places, and also hills and ravines. He maintained that homogeneous stuffs are the first principles, for just as gold is composed of what is called gold dust, so the whole universe results from the compounding of small homogeneous bodies. *Nous* is the first principle of motion; heavy bodies, such as earth, occupied the lower region; light ones, such as fire, the higher. Water and air occupied the middle. So, the sea remained on the surface of the earth, which is flat, as the moisture was evaporated by the sun.

(9) In the beginning the stars were carried around as though in a dome, so that the celestial pole which is always visible was directly over the earth, but later the axis became inclined. The Milky Way is the reflection of the light of those stars that are not illuminated by the sun. Comets are a conglomeration of planets that throw out flames, and shooting stars are like sparks hurled out by the air. Winds arise from air rarefied by the sun. Thunder is the clashing of clouds; lightning, the friction of clouds; an earthquake the sinking of air into the earth. Animals first came to be from moist, hot, and earthy stuffs, but later from one another; and males come from the right side and females from the left side [of the uterus].

(10) They say that he predicted the fall of the stone that occurred at Aegospotami; he said it would fall from the sun. That is why Euripides, who was his pupil, said in the *Phaethon* that the sun is a golden clod. Furthermore, when he went to Olympia he sat down in a leather cloak as though it were about to rain; and the rain began. When someone asked him if the mountains of Lampsacus will ever become sea, he reportedly answered, 'If time does not give out.' Once, when he was asked for what purpose he had been born, he said, 'for the study of the sun and the moon and the heavens.' To someone who said, 'You were deprived of the company of the Athenians,' he said, 'Not at all, but they of mine.' After seeing the tomb of Mausolus he said, 'an extravagant tomb is an image of wealth turned to stone.' (11) To a man who was grieving because he was dying in a foreign land, Anaxagoras said, 'No matter where you start, the descent to Hades is the same.'

According to Favorinus in his *Miscellaneous Histories,* Anaxagoras is thought to have been the first to declare that Homer's poetry is about

1 There is a problem with the name of the archon in the text; I here follow DK. See the discussion of Anaxagoras's life in Essay 1.

virtue and justice; this view was taken further by his friend Metrodorus of Lampsacus, who was the first to study the physical doctrines of the poet. Anaxagoras was the first to publish a book with diagrams. Silenus reports in the first book of his *Histories* that the stone fell from the heavens during the archonship of Demulus; (12) and, according to him, Anaxagoras said that the whole of the firmament was made of stones; they are held together by a powerful rotation and they fall when it slackens.

Different things are reported about his trial. In his *Succession of the Philosophers,* Sotion claims that Anaxagoras was brought to trial by Cleon for impiety because he held that the sun was a fiery mass of red-hot metal. Although he was defended by his pupil Pericles, he was fined five talents and exiled. But Satyrus says in his *Lives* that the suit was brought by Thucydides, a political opponent of Pericles, and that the charge was not only impiety but also Medism [Persian sympathies]; he was condemned to death *in absentia*. (13) When news was announced to him of his conviction and of the deaths of his children, he said about the conviction, 'Nature condemned both them and me to death a long time ago;' and about his children, 'I knew they were mortal when I begat them.' (Some attribute this to Solon, and others to Xenophon.) But Demetrius of Phaleron says in his *On Old Age* that Anaxagoras buried his children with his own hands. According to Hermippus in his *Lives* Anaxagoras was held in prison awaiting execution. When Pericles arrived, he asked if the accusers were able to bring any charges against *him* for his own way of life. They said nothing, and Pericles said, 'And yet I am his pupil; so don't kill the man because you were provoked by slanders; if you are persuaded by me, free him.' Anaxagoras in fact was released; but, unable to bear the insult, he killed himself. (14) In the second book of his *Miscellanies,* Hieronymous says that Pericles brought Anaxagoras to the court wasted and thin from disease, so that he was freed more from pity than from judgment. So much for the reports of his trial.

It seemed that he was somehow hostile to Democritus when he was unable to converse with him. Eventually he retired to Lampsacus and died there. When the archons of the city asked him what he wished to have done for him he said, 'Grant the children a holiday each year in the month of my death.' This custom is observed even now. (15) When he died, the Lampsacians buried him with honours and gave him this epitaph:

Anaxagoras, who reached the furthest limit of truth
about the heavenly cosmos, lies here.

I myself have written about him:

He once declared that the sun is a burning mass of red-hot metal;
for this Anaxagoras was destined to die;
yet while his friend Pericles rescued him,
he departed life because of the weakness of his wisdom.

There were three other people called Anaxagoras.[2] One of them was a rhetorician in the school of Isocrates, the second a sculptor whom Antigonus has mentioned, the last a grammarian of the school of Zenodotus.

### A2

**Harpocration *Lexicon*.** Anaxagoras: Anaxagoras the sophist, son of Hegesibulus, was from Clazomenae, and was a pupil of Anaximenes of Miletus. He was nicknamed Mind, because he said that matter and mind are the guardians of all things. It is he who said that the sun is a fiery mass of red-hot metal.

### A3

***Suda* A 1981.** Anaxagoras: Anaxagoras the sophist, son of Hegesibulus of Clazomenae, pupil of Anaximenes of Miletus. He was called Mind, because he said that matter and mind are the guardians of all things. It is he who said that the sun is a fiery mass of red-hot metal, that is, a fiery stone. Despite the fact that Pericles defended him, he fled Athens. After arriving at Lampsacus, he ended his life there by starving himself. He departed his life at the age of seventy years, because he was imprisoned by the Athenians for introducing a certain new belief about god.

### A4

**Cyril of Alexandria *Against Julian* 1.12 B**: He says that the natural philosophers Democritus and Anaxagoras were born in the seventieth Olympiad, and also Heraclitus, nicknamed 'the Obscure.'
**Eusebius *Chronicles***: 1557 years after Abraham, Anaxagoras dies [DK: Ol. 80, 1: 460].

### A4a

**Inscription on the Parian Marble; Ep. 60** (*Fragments of the Greek Historians* 239A60, II, 1000, 22): 179 years ago Euripides was 44 years

2 Omitting the parenthesis here, as do most recent editions of Diogenes Laertius.

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a stone or that there ever was a stone in it. Nevertheless, it will not be questioned that stones frequently fall [from the sky]. Even today a stone is worshipped in the gymnasium in Abydos for this very reason (indeed it is of moderate size), but the same Anaxagoras is said to have predicted that it would fall in the middle of the region.
**Eusebius *Chronicles***: A stone falls into the Goat River [Aegospotami] from the sky 1551 years after Abraham.

### A12

**Plutarch *Life of Lysander* 12**: Some also say that the fall of the stone was a portent of this calamity;[3] for, as many believe, an enormous stone fell from the heavens into Aegospotami. It is displayed even now by the people who live in the Chersonnese, who venerate it. It is said that Anaxagoras predicted that if some slipping or shaking occurred among the bodies that are held fast in the heavens, there would be an expulsion and a fall after one of the bodies has been broken off. He said that none of the stars is in its natural place, and, as they are made of stone and heavy, they shine because of the resistance and whirling of the aether. They are dragged along by force, bound together by the whirl and the tension of the circular motion. In this way, presumably, they were kept from falling here at the outset when the cold and the heavy things were separated off from the whole ... Daimachus testifies for Anaxagoras in his *Histories of Piety*, reporting that an enormous flaming body, just like a fiery cloud, was seen in the heavens for seventy-five days continuously before the stone fell. It did not stay in one place, but was moved along in complex and irregular paths, so that fiery fragments, torn away by its plunging and wandering path were carried in all directions and flashed like lightning, just like shooting stars.

### A13

**Plutarch *Life of Pericles* 16**: The man who maintained all this frugality for Pericles was a single house slave, Evangelos; he was unsurpassed in household economy, either because he was good at it by nature, or through being trained by Pericles. Indeed, these reports are opposed to the wisdom of Anaxagoras, if Anaxagoras really abandoned his house and left his land fallow to be grazed by sheep because of his zeal and high-mindedness. But,

3 The Athenian fleet was defeated by Lysander at the Battle of Aegospotami in December, 405 BC.

I think, the life of a speculative philosopher is not the same as that of a politician.

**Plato *Hippias Major* 283a4–6**: [They say that] although a rich estate was left to him, Anaxagoras paid no care and it was lost to him. Thus he practised wisdom mindlessly.

## A14

**Tertullian *Apology* 46**: But if I were to make a comparison [between Christians and pagans] on the basis of trust: Anaxagoras refused to return a deposit to his guests; but Christians are called trustworthy even by strangers.

## A15

**Plato *Phaedrus* 269e**: It is very likely, my friend, that Pericles became the most complete rhetorician of all. – Why? – Because all the great arts require glibness and lofty talk about nature. This, it appears, is the source of their high-mindedness and their effectiveness in all respects. In addition to his natural ability, Pericles acquired this skill; for, I suppose, he happened upon just such a one in Anaxagoras, and was filled with lofty talk and understood the nature of mind and mindlessness, concerning which Anaxagoras had very much to say; from this Pericles drew what was most advantageous for the art of rhetoric.

**Isocrates 15.235:** Pericles was a pupil of two sophists, Anaxagoras of Clazomenae and Damon; the latter was thought in his time to be the most sensible of his fellow citizens.

**Plutarch *Life of Pericles* 4**: But the one who most associated with Pericles and who most bestowed on him that dignity and wisdom more weighty than demagoguery, and on the whole raised up and exalted the worthiness of his character, was Anaxagoras of Clazomenae. Men used to call him Mind, either because of their amazement at his great and prodigious understanding of natural philosophy, or because he was the first to institute neither chance nor necessity as the principle of order in the universe, but rather mind, pure and unmixed among all the other mixed things, separating off the homogeneous stuffs.

**Cicero *On the Orator* 3.138**: No mere windbag taught Pericles to bark in time to the clepsydra,[4] but as we are told, it was *the* Anaxagoras of Clazomenae.

4 A *clepsydra* (in this sense of the word) is a water clock used to monitor the length of speeches. The word also refers to a household implement used for transferring liquids, as in A68 and A69.

## A16

**Plutarch *Life of Pericles* 6**: These are not the only advantages that Pericles enjoyed because of his connection with Anaxagoras. It seems that Pericles rose above superstition, that attitude of astonishment about celestial occurrences that is produced in those who are ignorant about the causes of things and who are crazed by divinity and divine interventions because of their inexperience in these areas. Natural philosophy substitutes for festering superstition that unshaken piety that is attended by good hopes. It is said that once the head of a one-horned ram was brought to Pericles from the country; Lampon the soothsayer, when he saw that the horn had grown strong and firm from the middle of the forehead, said that, whereas there were two factions in the city, those of Thucydides and Pericles, sovereignty would pass to the one to whom the omen came. But when the skull was cut in two, Anaxagoras demonstrated that the brain had not filled out its space, but was pointed, like an egg, and had pulled away from the skull to the very spot from where the root of the horn had its starting place. Then Anaxagoras was admired by all who were present. But a little later, when Thucydides had been overthrown and Pericles had taken charge of public affairs, it was Lampon who was admired. Nevertheless, there was nothing, I suppose, that prevented both the physical scientist and the soothsayer from being right; for the one rightly understood the cause and the other the purpose of the event.

## A17

**Plutarch *Life of Pericles* 32**: At about this time . . . Diopeithes introduced a bill that those who did not recognize the gods, or who taught theories of the heavens, be prosecuted, thus drawing suspicion against Pericles through Anaxagoras . . . [Pericles] feared for Anaxagoras and sent him out of from the city.

**Diodorus of Sicily 12.39**: Furthermore, they also brought evidence of impiety towards the gods against Anaxagoras the sophist, teacher of Pericles.

## A18

**Plutarch *Life of Nicias* 23**: Although he was the first to put in writing the clearest and boldest of all the theories about the waxing and the waning of the moon, Anaxagoras himself was not venerated nor was his theory the best known; it was as yet secret, and circulated among a few people with some discretion rather than with boldness. For, at the time, people did not tolerate the natural philosophers and the so-called stargazers, because

they reduced the divine to unreasoning causes, non-providential forces, and necessary happenings. So, Protagoras went into exile, and Pericles barely saved Anaxagoras, who had been imprisoned.
**Eusebius *Chronicles*** [79th Olympiad, 3rd year = 462/1]: 1554 years after Abraham, there was an eclipse of the sun. Anaxagoras died.

## A19

**Josephus *Against Apion* 2.265**: Anaxagoras was from Clazomenae, but because he said that the sun was a red-hot stone, the Athenians, who supposed that it was a god, condemned him to death by a few votes.
**Olympiodorus *Commentary on Aristotle's Meteorologica* 17.19**: . . . only the stars are fiery, so Anaxagoras, too, called the sun 'red-hot iron' [*mudros*] on account of the enormity of its burning, for *mudros* is iron that has been heated to be red hot. Wherefore Anaxagoras was ostracized by the Athenians for having the boldness to say this sort of thing. Later, because of the rhetorical skill of Pericles, he was recalled; for it happened that Pericles was a pupil of Anaxagoras.

## A20

**Philodemus *Rhetoric* 2.180**: A slave of . . . [Cleon?] . . ., who had been flogged, gave information to the jurors against Anaxagoras; Cylon of Croton, by bringing charges against Pythagoras, banished him from the city, and destroyed his assembled disciples by fire.[5]

## A20b

**Pseudo-Iamblichus (?) *Arithmetical Theology* 6.18**: Euripides, because he was a pupil of Anaxagoras, describes the earth this way: 'The wise among mortals suppose you to be a hearth.'
**Euripides fragment 944**: And mother Gaia [Earth]: The wise among mortals call you a hearth seated in the aether.

## A20c

A20c is concerned with evidence for the relation between Anaxagoras and Euripides.[6] Satyrus, a biographer of the third century BC, wrote a collection of *Lives*, including a biography of Euripides, written as a dialogue (Diels remarks that it is a 'learned interpretation'). Four damaged pages of this

5 The text, particularly the part dealing with Anaxagoras, is doubtful.
6 This entry is peculiar in being composed partially of ancient texts, and partially of Diels's comments and explanations. I have summarized Diels's comments and translated the texts that are relevant to Anaxagoras.

were found at Oxyrynchus; in places the papyrus is only partially legible. At Fragment 37c 1 line 22 (139 in Hunt's edition of the Oxyrhynchus Papyrus), there is a mention of Anaxagoras; in DK it appears as 'then he admired (?)[7] Anaxagoras exceedingly . . .'[8] Satyrus then goes on to quote from Critias's *Peirithous* (see DK 88B19), attributed to Euripides; next (37c 3 line 9) he cites Euripides fragment 912, and adds a comment: '"To you, the ruler of all things I bring green shoots and cakes, whether you have the name of Zeus or Hades . . ." [Euripides] has accurately comprehended the whole of Anaxagoras's world order, containing it in three (words; verses?).[9] Indeed in another place he puzzles about what rules the heavens: "Zeus, the necessity of nature, or the mind (*nous*) of mortals . . ." (Euripides *Trojan Women* 886).' The next two columns of the papyrus are probably lost. Diels then continues, giving Satyrus's quotation of Euripides fragment 913, which seems to endorse a belief in divine power, rather far from Anaxagoras's own views. After registering praise for hard work (*ponos*) and contempt for wealth (*ploutos*), the papyrus goes on to discuss the relation between Euripides and Socrates.

### A21

**Aulus Gellius *Attic Nights* 15.30**: Alexander of Aetolia composed these verses about Euripides:

In my opinion, the pupil of good Anaxagoras was harsh to speak out
with hatred of laughter,
not even having learned to banter when drunk;
but what he wrote was crafted with honey and Siren-songs.

**Aelian *Miscellanies* 8.13**: They say that Anaxagoras of Clazomenae was not seen to laugh or smile at all.

### A22

**Athenaeus *Sophists at Dinner* 5.220B**: Aeschines' *Callias* includes the argument between Callias and his father and mockery of the sophists Prodicus and Anaxagoras. He says that Prodicus formed his pupil Theramenes,

7 The text is uncertain here. Diels supplies 'admired'; Hunt, in his text of the Oxyrhynchus Papyrus, supplies no verb.

8 Again the text is uncertain; at this point the papyrus contains the letters φυσ (*phys*), which might be a reference to 'nature' or 'physics' (*physis*).

9 Another uncertain text. If Satyrus wrote 'three words,' which are the ones that are supposed to show Euripides' accurate grasp of Anaxagoras's system? Perhaps 'τῷ πάντων μεδέοντι (the ruler of all things)'? It is not clear from the extant fragments why this phrase should be taken to be particularly Anaxagorean.

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of thing and quizzing Anaxagoras about why someone should choose to be born rather than not. Anaxagoras replied, 'For the sake of contemplating the heavens and the whole order of the universe.'

**Euripides, Fragment 910**:

Happy is he who has gained knowledge of inquiry,
who is moved neither to hostility towards fellow citizens,
nor to unjust acts,
but who contemplates the ageless order
of deathless nature, to what end it was put together,
and in what manner, and how.
To such as these, anxiety about shameful deeds
never clings.

## A31

**Valerius Maximus *Memorable Doings and Sayings* 8.7.6**: How great the zeal with which Anaxagoras must have burned! When he had returned home after an extended journey abroad and saw his estates abandoned, he said, 'I would not have been safe unless they had perished.' A saying possessed of sought-after wisdom! For if he had given his time to the cultivation of his property rather than of his mind, he would have remained master of domestic things, among the household gods, and would not have returned to them the great Anaxagoras.

## A32

**Plutarch *Life of Pericles* 16**: They say that since Pericles was busy, Anaxagoras, who was now old, was lying uncared for, with his face covered, starving. When the news was announced to Pericles, he was stricken, and straightaway ran to him and entreated the man zealously, lamenting, not for Anaxagoras, but for himself, that he should lose such an adviser in matters of state. At that point, Anaxagoras uncovered his face and said to him, 'Pericles, even those who have need of a lamp pour oil into it.'

## A33

**Galen *On the Theories of Hippocrates and Plato* 4.7**: For this reason [Posidonius] says *to familiarize* oneself with things before they occur and experience them as though they were present. For Posidonius the word *to familiarize* means something like to resolve to anticipate or to conceive for oneself beforehand what is about to happen and so to have already become habituated to make little of it. And that is why he has adopted here the

saying of Anaxagoras, who, when someone announced the death of his son to him, said very calmly, 'I knew I begat a mortal,' just as Euripides took the thought for himself, and made Theseus say (fr. 964),

Having learned from some wise man
I always put fitting thoughts in my mind
Anticipating to myself banishment from my country,
Untimely deaths, and other sorts of evil,
So if something should befall that I have conceived in my heart,
What befalls would no longer sting me as something new.

***Alcestis* 903**:

Among my kin,
one had a boy, an only child, worthy of lamentation,
who died in his house; yet he endured
abundant evil: childless,
being already grey-haired,
far on in the path of life.

## A34

**Stobaeus *Florilegium* 4.52b.39**: Anaxagoras says that there are two rehearsals for death: the time before birth and sleep.

## A34a

**Cicero *Tusculan Disputations* 1.43.104**: How nobly Anaxagoras answered friends when he was dying at Lampsacus; they were asking whether he would like to be brought to his home in Clazomenae if something should happen. 'There is no need,' he said, 'for in truth the roads to the underworld are the same from anywhere.'

# WRITINGS

## A35

**Plato *Apology* 26e7–d9**: [The speakers are, first, Meletus, one of the accusers of Socrates, and then Socrates himself.] 'That is what I mean, that you do not believe in the gods at all.' 'You are amazing Meletus! Why do you say this? Do I not think that the sun and the moon are gods, just as other people do?' 'No, by Zeus, men of the jury, he does not, because he says that the sun is a stone, and that the moon is earth.' 'Do you imagine that you are prosecuting Anaxagoras, my dear Meletus, and are you so

disdainful of the jury; do you suppose they are so illiterate that they do not know that the books of Anaxagoras of Clazomenae are full of these doctrines? And do you suppose that the young men in fact learn from me these views, which they can acquire from time to time for a drachma (at most) in the orchestra,[12] and laugh at Socrates, if he pretends that they are his own . . . ?'

## A36

**Clement *Miscellanies* 1.78**: Yes, the teaching and the writing of these accounts came into Greece rather late. At any rate, Alcmaeon son of Perithos of Croton was the first to compose an explanation of the natural world; others report that Anaxagoras son of Hegesibulus of Clazomenae was the first to publish a book.

## A37

**Diogenes Laertius *Lives of the Philosophers* 1.16**: Those with only one book include Melissus, Parmenides, Anaxagoras.

## A38

**Plutarch** *On Exile* **17.607f**: But while Anaxagoras was in prison he wrote on the squaring of the circle.

## A39

**Vitruvius *On Architecture* 7 Preface, 11**: To begin, when Aeschylus was producing a tragedy in Athens, Agatharchus made the scenery and left a

12 Some commentators and translators suggest that the orchestra was the part of the Agora where there were bookshops; so, for instance, Guthrie, 2:269, suggests that the young men buy books there. In contrast, the commentary on the *Apology* by de Strycker and Slings states, 'what the young men can occasionally procure for money are not books, but the contents of Anaxagoras' teaching. There is no suggestion whatsoever of the young men buying books' (308). Thus, the young pay a drachma (at most) to hear a reading or explanation of Anaxagoras's views. Nevertheless, the context, especially the claim that Meletus is wrongly implying that the jury are illiterate, suggests that the young men are able to read, and that Socrates means that they are buying books, and not just the chance to hear a book read. Ferguson argued that *used* books were sold in the orchestra: he cites Erectheum accounts that shows that 'two sheets of paper for keeping accounts cost two drachma four obols'; thus books must have been more expensive. Ferguson says that the low price for Anaxagoras' old book (one drachma 'at most') indicates that 'what we have here is an early example of a second-hand bookshop or remainder sale' (Ferguson 173). Brumbaugh follows Ferguson; this seems as good a solution as we can hope to the problem.

discussion of it. On the basis of these instructions, Democritus and Anaxagoras wrote about the same thing, that is, how it is necessary, once a central fixed point is established, that lines correspond with the pupil of the eyes and the projection of its rays in accordance with a natural principle, so that from something indefinite, definite images of buildings become evident in the paintings on the scenery, and that some of the things that are depicted on upright flat surfaces would seem to recede and others of them to project.

### A40

**Munich Codex 490 s. 15, fol. 483v** [Miscellanea, vgl. Hardt 5 141] (15th century): Concerning Anaxagoras: Some say Anaxagoras wrote a treatise on insoluble questions, and called it *The Strap* because, so he thought, it tied readers up in its difficulties.

## DOCTRINES

***Index* in Diogenes Laertius 5.42**: Theophrastus. *Against Anaxagoras*: 1 book; *About the Doctrines of Anaxagoras*: 1 book.

### A41

**Simplicius *Commentary on Aristotle's Physics* 27.2** (from Theophrastus): Anaxagoras son of Hegesibulus, a native of Clazomenae, who agreed with the philosophy of Anaximenes, was the first to modify views about the first principles, and he supplied the explanation that had been lacking;[13] he made the corporeal principles unlimited in number. He held that all the homogeneous stuffs, such as water or fire or gold, are ungenerated and indestructible, but only appear to come to be and pass away by means of compounding and separating apart, since everything is in everything, and since each thing is characterized by what predominates in it. For that in which there is a great deal of gold appears to be gold, although all things are present in everything. At any rate, Anaxagoras claims that 'in everything there is a share of everything' and 'each one is and was most manifestly those things of which there are the most in it' [B12]. Theophrastus says that Anaxagoras' assertions are similar to those of Anaximander; for he says that in the course of the separation of the unlimited, stuffs that are of the same kind are drawn towards one another, and that what was gold in the whole comes to be gold, and what was earth in the whole comes to be earth, and similarly for each of the others, as they do not come to

13 Probably a reference to the efficient cause – *Nous*.

be but were already present in the mixture before. Anaxagoras postulated Mind (*Nous*) as the cause of motion and coming-to-be; the things separated by Mind generated the world-orders and the nature of the other things. 'When these things are understood this way,' Theophrastus says, 'Anaxagoras would seem to make the material principles unlimited, and Mind the single cause of motion and coming-to-be; but, if someone were to consider the mixture of all things as a single nature, unlimited both in form and in extent, it follows that Anaxagoras claims that there are two principles, the nature of the unlimited and Mind; so he is clearly treating the material elements in a manner similar to Anaximander.' (See also Simplicius *Commentary on Aristotle's Physics*, 154.14–23, where Simplicius repeats Theophrastus's comment.) **166.15**: When Anaxagoras said that 'nor of the small is there a smallest but always a smaller [B3],' [he meant that] there is not a largest either. Anaxagoras's own text makes this clear; and so too does Theophrastus when he writes in the second book of his *On Anaxagoras* as follows, 'and then, it is unconvincing to say that everything is in everything because everything is unlimited both in largeness and in smallness and it is impossible to grasp either the smallest or the largest . . .'

## A42

**Hippolytus *Refutation of all Heresies* 1.8.1**: (1) After Anaximenes, comes Anaxagoras son of Hegesibulus of Clazomenae. He said that the fundamental principle of everything is mind and matter – mind because it makes, matter because it comes to be. For when all things were together, Mind came and set them in order. He says that the material principles are unlimited and he calls the smaller of them unlimited (*apeira*).[14] (2) All things partake of motion through being moved by Mind, and the like things come together. The heavenly bodies have been arranged by circular motion; the dense and the wet and dark and cold and all the heavy things came together in the middle, and the earth formed by their coalescing. Their opposites – the hot and the bright and the dry and the light – rushed far out into the aether. (3) He held that the earth is flat in shape and that it remains suspended because of its size, and because there is no void, and also because the air, which is very strong, carries the earth, which rides on it. (4) As to the moisture upon the earth, he held that the sea sprang both from the waters in the earth (the evaporation of which was the source of what has remained) and also from the rivers that have flowed into it. (5) Rivers

14 This is unclear, but Hippolytus may be referring to Anaxagoras's claim in B1 that 'the small, too, was unlimited.'

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the things themselves, and equally suffer and pass away, nor does anything curb them back from destruction. For which of these will endure under crushing pressure, so as to escape death between the very teeth of destruction? Fire or water or air? Which of these? Blood or bones? Nothing, as I think, when everything alike will be in its essence as perishable as what we see manifestly pass away from our sight overcome by some violence. But I appeal to what has already been demonstrated,[20] to prove that things can neither fall back into nothing, nor again grow out of nothing.

Besides, since food increases the body and nourishes it, we may know that veins, and blood and bones [and sinews are made of parts not like themselves;][21] or, if they say that all foods are made of miscellaneous substance, and contain within them small bodies of sinews and bones and also veins and particles of blood, it will follow that all food itself, both solid food and liquid, is held to consist of things unlike itself, bones and sinews, pus and blood commingled. Besides, whatever bodies grow out of the earth – if they are in the earth – then the earth must consist of things unlike itself which arise out of it. Apply this reasoning to other cases, and you may use the very same words. If flame, if smoke and ashes are hidden in wood, the wood must necessarily consist of things unlike itself, of unlike things which arise out of the wood. Besides, whatever bodies the earth nourishes and increases [must consist of things unlike themselves, which in their turn must contain things unlike themselves].[22]

Here is left some slight opportunity for evasion, which Anaxagoras turns to advantage in supposing that all things are hidden immingled in all things, but that alone appears which preponderates in the mixture and is more to be seen and placed right in the front. But this is far removed from true reasoning. For then it were proper that corn also, when it is being ground by the crushing strength of the millstone, should show often a sign of blood or something of those substances which are nourished in our bodies; and when we rub with stone upon stone the blood should trickle. In the same way, it were fitting that herbage also and water should often emit drops sweet and of like flavour to the milk from the udders of fleecy ewes; and assuredly when clods of earth have been crumbled, various kinds herbage ought often be seen, and corn, and leaves, scattered about and lurking amid the earth in small portions; lastly when wood is broken, smoke and ashes and fire should be seen lurking in small portions.

20 Earlier in book 1.

21 Text as in Rouse.

22 There is a textual problem; I follow the text of Rouse, who says, 'The passage within brackets gives what is, according to Bailey, the likely sense of the missing argument.'

But since plain matter of fact teaches that nothing of this is to be seen, we may know that things are not thus mixed up in things, but seeds common to many things must in many ways lurk immingled in things.

'But,' you say, 'often on great mountains it happens that the topmost branches of tall trees, being close together, are rubbed one against another when the strong south winds compel them so to do, until the flower of flame breaks out and they blaze.' Assuredly; and yet fire is not implanted in the wood, but there are many seeds of heat which stream together by rubbing and make a conflagration among the forests.[23] Whereas, if the flame were hidden in the forests ready made, the fires could not be concealed for a moment, they would consume the forests everywhere, burn up the trees. Do you see now, as I said a little while ago, that it is often of very great importance with what and in what position these same primary elements are held in union, and what motions they impart and receive mutually, and how the same elements a little changed in relations create fires and firs? Just as the words themselves too consist of elements a little changed, when we mark 'firs' and 'fires' [*ligna atque ignes*] with a distinct name.

## A45

**Aristotle *Physics* 3.4 203a19–33**: Those who make the elements unlimited in number, as Anaxagoras and Democritus do, say that the infinite is continuous by contact: according to the former, of his homogeneous stuffs; according to the latter, of his seed-mass of the shapes. Further, Anaxagoras says that any of the parts is a mixture just as the whole is, because of the observation that anything comes to be from anything. This is probably why he says that at one time all things were together, for instance, this flesh and this bone, and thus anything, therefore all things, and hence all at the same time. There is a beginning of separation, not only in each case but also for everything. Since what comes-to-be is generated from this sort of body, and there is coming-to-be of all things (but not at the same time), then it is necessary that there be some first principle of coming-to-be, which is one, such as what Anaxagoras calls Mind (*Nous*). Now, *Nous*

23 This passage is quite similar to a comment in Thucydides about the fire set by the Peloponnesians at Plataea: 'The consequence was a fire greater than any one had ever yet seen produced by human agency, though it could not of course be compared to the spontaneous conflagrations sometimes known to occur through the wind rubbing the branches of a mountain forest together' (Book 2.77.4; *The Peloponnesian War* [London: J.M. Dent; New York: E.P. Dutton, 1910]). Calder suggests that Thucydides is quoting Anaxagoras.

took thought and began work from some beginning point, so that it is necessary that at one time all things were together and began to be moved at some time.

**Simplicius *Commentary on Aristotle's Physics* 460.4**: Because Anaxagoras postulates the homogeneous stuffs and Democritus the atoms (so that each proposes first principles that are infinite in number) Aristotle first inquires into the opinion of Anaxagoras and explains why Anaxagoras came to this sort of supposition. He shows that it was necessary that he say not only that the whole mixture is unlimited in extent but also that each homogeneous stuff is also unlimited, since it is just like the whole and has all things in it, and not just unlimited things but unlimitedly unlimited things. Anaxagoras came to this view supposing that nothing comes to be from what-is-not and that everything is nourished by its like. He saw that everything comes to be from everything, if not immediately then in order (for air comes from fire, and water from air, earth from water, stone from earth, and fire comes once again from stone) and that by taking in the same food (such as bread) many different things come to be – fleshes, bones, veins, sinews, hair, nails and (if circumstances are favourable) feathers and horns – and that like is augmented by like. Because of this he supposed that these things are in the food, and that if trees are nourished by water, wood and bark and fruit are in it. Thus, he said that everything is mixed in everything and that coming-to-be occurs by separation. And with respect to this, perhaps he also maintained that some things remain when other things come to be from them, such as fire from stone and air from bubbling water. He observed everything separating off from each of the things that has now been made distinct, as for instance, flesh and bone and other things are separated off from bread, as though all were present at the same time and mixed together in it, and from these observations he conjectured that indeed all the things that are were formerly mixed together before they were separated. This is why he began his book this way, 'All things were together' [B1] so that 'everything whatsoever is a mixture resembling the all,' just as this bread is a mixture of both this flesh and this bone. **1123.21**: Anaxagoras seemed to say that after all things were together and at rest for an unlimited earlier time, cosmos-making *Nous*, wishing to separate the forms (which he calls *homogeneous stuffs*), put motion into them.

## A46

**Aristotle *On Coming to Be and Passing Away* 1.1 314a18**: [Anaxagoras] makes the homogeneous stuffs elements, for instance, bone and flesh and

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tell me, first whether the earth is flat or round, and after this, he would go on to explain why it is so of necessity, saying which was better, and that it was better to be this way. And if he were to say that the earth is in the middle, he would go on to explain that it was better that it be in the middle. And if he were to demonstrate these things to me, I was ready to give up yearning for another kind of explanation. Furthermore, I was prepared to learn, in just the same way, this sort of thing about the sun and the moon and the other stars, about their relative velocity, their turnings, and other things that happen to them – how it was better that each act and be acted on just as it is. For I never thought that, having said that these things have been ordered by Mind, he would introduce any other explanation for them than that it is best that things be just as they are. Having given the reason for each of them and the general reason for all of them, he would, I supposed, go on to explain the best for each and the common good for all. And I would not have given up my hopes for a fortune! Eagerly getting hold of his books, I read them as fast as I could, in order to know as quickly as possible what was the best and the worse. I gave up this wonderful hope, my friend, because, on further reading, I saw a man making no use of Mind, nor ascribing to it any responsibility for the ordering of things, but giving as reasons airs, aethers, waters, and many other odd things.

**Aristotle *Metaphysics* 1.4 985a18**: Anaxagoras uses *Nous* as a *deus ex machina*[24] in world making, and he drags it in whenever he is puzzled about the reason why something is as it is necessarily, but in other cases he makes the causes of what happens everything except *Nous*.

**Simplicius *Commentary on Aristotle's Physics* 327.26**: Eudemus reports that despite having allowed for *Nous*, Anaxagoras introduces the agency of chance for most things.

## A48

**Aëtius 1.7.5**: Anaxagoras says that at the beginning the bodies had been motionless and that the mind (*Nous*) of god ordered them and produced the comings-to-be of the whole. **1.7.15**: Anaxagoras says that god is mind, the maker of the *kosmos*.

**Euripides fragment 1018**: For *nous* is god in each of us. (See also *Trojan Women* 886: 'Zeus, the necessity of nature, or the mind (*nous*) of mortals . . .')

24 Ross, in his commentary on the *Metaphysics* (1:137) says, '*μηχανή*, as is shown by the word *παρέλκει* (*drags*), refers to the stage *deus ex machina*.'

**Iamblichus** *Protreptricus* **8**: 'Our mind (*nous*) is god'; either Hermotimus or Anaxagoras said this.
**Philodemus** ***On Piety*** **c. 4a**: God was and is and will be and rules and controls all things. *Nous* arranged the whole mixture, which was unlimited.
**Cicero:** ***On the Nature of God*** **1.11.26**: Then Anaxagoras, who was taught by Anaximenes, was the first to maintain that the order and disposition of all things is designed and perfected by the power and reason of an unlimited mind. In saying this he did not see that it is impossible for motion to be joined with sensation and contained in something unlimited, or for there to be any sensation at all in that which does not sense by virtue of its whole nature being affected. Moreover, if he wanted this mind to be a certain sort of living thing, there must be something internal to it in virtue of which it is called an animal. But what is more internal than mind? That is why it is surrounded by the outer body. But that is not acceptable [to him]; consequently, a naked and simple mind, joined to nothing through which it can sense, seems to evade the power and intelligence of our reason.

## A49

**Cicero:** ***Academica Pr.*** **2.37.118**: Anaxagoras held that matter is unlimited, but that out of it come minute particles similar to one another; at first these were all mixed together, but later they were put in order by a divine mind.

## A50

**Aristotle** ***Physics*** **3.5 205b1**: Anaxagoras speaks absurdly about why the infinite is at rest. For he says that the infinite itself fixes itself in place. He says this because it [the infinite] is in itself, for nothing else encompasses it, as though wherever something is, it is there by its own nature.
**[Aristotle]** ***On Melissus, Xenophanes, and Gorgias***[25] **2 975b16**: But even if these things were unlimited from the beginning, i.e., those from which things come to be through combination and are destroyed through dissociation, – just as some say Anaxagoras means when he says that generated things come to be from eternal and unlimited beings – even so, not everything would be eternal; for there would be some things that are coming to be and that have come to be from the things that are, and passing away into other kinds of being. **976a14**: Now when [Melissus] says that the All

25 Text as in DK 30A5.

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asleep. If everything were mixed together, but there were no separation, then soon the Anaxagorean state would occur: all things together.'

## A54

**Aëtius 1.17.2**: The Anaxagoreans and Democriteans say that mixtures come to be through the juxtaposition of the elements.

## A55

**Plato *Cratylus* 413c**: Someone else laughs at all these other accounts. He says that justice is what Anaxagoras says: it is *Nous*. For Anaxagoras says that mind is self-ruling, mixed with nothing else, and it orders all the things that are, passing through everything.

**Aristotle *On the Soul* 1.2 405a15**: Anaxagoras seems to say that soul and mind (*Nous*) are different ... but in fact he treats the two of them as a single thing, except that he above all makes *Nous* the principle of all things. At any rate he says that, alone of the things that are, it is simple and unmixed and pure. He assigns both knowing and moving to the same principle, saying that *Nous* moves the whole.

## A56

**Aristotle *Physics* 8.5 256b24**: That is why Anaxagoras speaks the truth when he says that *Nous* is impassible and unmixed, since he makes it the cause of motion. For it could move things only if it is unmoved, and rule only if it is unmixed.

## A57

**Clement *Miscellanies* 2.14**: Yet even if Anaxagoras were the first to set *Nous* over things, not even he preserved the making cause; rather, he depicts some unintelligent whirls together with the inactivity and thoughtlessness of *Nous*.

## A58

**Aristotle *Metaphysics* 1.3 984b15**: When someone said that *Nous* is present – in nature just as it is in animals – as the cause of the cosmos and of all its order, he appeared as a sober man among the random chatterers who preceded him. We know that Anaxagoras clearly held these views, but Hermotimus of Clazomenae gets the credit for holding them earlier.

## A59

**Simplicius *Commentary on Aristotle's Physics* 1185.9**: Eudemus criticizes Anaxagoras not only because he says that motion began at a certain time and that it did not exist before then, but also because he neglected to say whether it will continue or will cease at some time, although these things are not obvious. 'For,' he says, 'why is it not possible to suppose that at some time everything comes to a halt through the agency of *Nous*, in just the way that Anaxagoras said that it moves everything?' Eudemus also criticizes Anaxagoras's view: 'How is it possible for some deprivation to exist before its opposite state? If rest is really the absence of motion, it would not exist before motion.'

## A60

**Aristotle** *Metaphysics* **10.6 1056b28**: For this reason Anaxagoras erroneously abandoned the subject when he said 'all things were together unlimited in number and in smallness'; he ought to say 'and in fewness' rather than 'and in smallness.' For fewness is not unlimited, since 'the few' is not made by one, as some say, but by two.[26]

## A61

**Aristotle *Metaphysics* 12.2 1069b15**: Since what-is is said in two ways, everything changes from that which is potentially into that which is actually (for instance, from the potentially pale to the actually pale, and similarly in the case of growth and destruction), so that not only can something come to be incidentally from what is not, but everything comes to be from what is: of course it comes from what is in potentiality, and from what is not in actuality. And this is the One of Anaxagoras; for rather than 'all things together,' and the mixture of Empedocles and of Anaximander, and what Democritus says, it is better to say 'all things were together in potentiality, but not in actuality.' **1.8 989a30**: If one were to presume that Anaxagoras says that there were two elements, one would, with good reason, posit a view that Anaxagoras himself did not state clearly, but which he would be forced by necessity to accept if someone were to point it out to him. It is absurd to say that all things were mixed together at the beginning: for

26 In this rather puzzling passage, Aristotle criticizes what Anaxagoras says in B1. In his commentary on the passage, Ross explains that Aristotle thought that in B1 'Anaxagoras meant to be mentioning opposites; and the opposite of multitude [or the unlimited] is not smallness but fewness,' and adds that two is 'the absolute few' (Ross 2:296, 297).

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## A71

**Aëtius 2.13.3**: Anaxagoras says that the surrounding aether is burning hot by nature, and through the vigour of its whirling around, it snatched up rocks from the earth and, igniting them, has made them stars.

## A72

**Aëtius 2.20.6**: Anaxagoras says that the sun is a mass of red-hot metal or a fiery rock. **2.21.3**: Anaxagoras says that the sun is many times larger than the Peloponnese. **2.23.2**: [On the sun's solstice, or turning.] Anaxagoras says that it is the result of counter-pressure from the air in the north,[30] which the sun itself strengthens by condensation, when it compresses the air.

**Scholium on Apollonius of Rhodes 1.5.498**: Anaxagoras says that the sun is a mass of burning metal, from which all things come to be.

## A73

**Xenophon *Memoirs of Socrates* 4.7.6f.**: On the whole, Socrates advised against becoming a deep thinker about the way god devises the heavens ... he said that one who cares about these things risks derangement no less than Anaxagoras, who took the greatest pride in explaining the works of the gods, and lost his own wits. (7) For when Anaxagoras said that fire and the sun are the same, he was ignoring the fact that people gaze easily at fire, but are not able to look straight at the sun, and that when they are exposed to the sun they have darker complexions, but that this is not the case with fire. He also ignored the fact that nothing growing from the earth is able to grow well without the bright light of the sun, but that everything perishes when heated by fire. When he alleged that the sun is a fiery stone he was also ignorant of this: that a stone in fire neither shines nor lasts for long, but that the sun endures for all time as the brightest of all things.

**Aristotle *On the Heavens* 1.3 270b24**: Anaxagoras has used this word [i.e. *aether*] incorrectly; for he uses *aether* instead of *fire*.

**Simplicius *Commentary on Aristotle's On the Heavens* 119.2**: Aristotle criticizes Anaxagoras for improperly deriving the word *aether* (αἰθήρ), taking it to be from *aithen* (αἴθειν), which is *to burn*, and so using it instead of *fire*.

30 *Tais arktois*: 'in the north regions'; but the use of the plural perhaps suggests that 'the air at the poles [both north and south?]' is meant here. Hippocrates in *Airs, Waters, Places* 5 uses similar phrasing and clearly means the direction north. For Empedocles' explanation of the solstice, see DK 31A58.

## A74

**[Aristotle] *Problems* 11.33 903a7**: Why is the night a better time for hearing than the day? Perhaps, as Anaxagoras says, because the air, when heated by the sun, hisses and makes noise during the day, but at night it is quiet because the heat has died down.

**Plutarch *Convivial Questions* 8.3.3.722a**: Anaxagoras says that air that is stirred up by the sun has quivering motions and vibrations. This is obvious from the small bits of dust and particles that are always darting through the light, which some call motes. The man says that because of the heat these things hiss and make noise during the day, making other sounds difficult to hear because of the noise. But at night their motion and noise . . .†[31]

## A75

**Proclus *Commentary on Plato's Timaeus* 3.63, 36**: Plato has taught that their progression into the world-order [i.e., of the sun and moon] was linked.[32] He himself did not originate this hypothesis, but, as Eudemus reported, Anaxagoras was the first to maintain this.

## A76

**Plato *Cratylus* 409a9–b1**: It seems to show that what Anaxagoras recently said, that the moon gets its light from the sun, is rather old-fashioned. **409b5–8**: Now, if what the Anaxagoreans say is true, this light of the moon is always both young and old in a way; for, I suppose, as the sun always goes around in a circle it always casts new light on the moon, but the old light from the previous month is already there. (See also Plutarch, *On the Face in the Moon* 16.7.929 = B18).

## A77

**Scholium on Apollonius of Rhodes 1.498**: This same Anaxagoras declares that the moon is a flat broad place, from which, it is supposed, the Nemean lion had fallen.[33]

31 The text here reads *φαίνεσθαι*; there is general agreement that this is impossible and that the text is corrupt; DK report the following suggestions for completing the sentence: *ὑφίεσθαι* (are abated), *μαραίνεσθαι* (die away), *παύεσθαι* (cease or leave off).

32 Plato gives linked explanations of the origins of sun and moon.

33 In Plutarch's essay *On the Face in the Moon*, there is a mention of a lion that fell from the moon onto the Peloponnese (937f). Cherniss's note to the passage (in the Loeb

**Aëtius 1.25.9**: Anaxagoras and Democritus say that the moon is a fiery solid body that has in itself plains, mountains, and ravines.
**Achilles *Introduction to Aratus's Phenomena*** 21 p. 49.4 M: Others say that the moon is a solid flaming earth that contains fire. There are other habitations there, and there are rivers, and as many things as are on the earth. Legend says that the Nemean Lion fell from there.
**Aëtius 2.30.2**: Anaxagoras: The moon is unevenly composed, because it is at the same time earthy and mixed with cold; it has heights, lowlands, and hollows. He says that the murky part has been mixed with the fiery, so that the moon seems shadowy; whence it is said to be the star that shines with false light. **2.28.5**: Thales was the first to say that the moon is illuminated by the sun; similarly Pythagoras, Parmenides, Empedocles, Anaxagoras, and Metrodorus said this. **2.29.6, 7**:[34] Thales, Anaxagoras, Plato, and the Stoics are in agreement with the mathematical astronomers that the monthly disappearances of the moon are brought about because it is in conjunction with the sun by which it is illuminated. Eclipses of the moon occur because the moon falls into the shadow of the earth when the earth comes between the two heavenly bodies [i.e., the sun and the moon], or rather when the moon is screened. Anaxagoras, as Theophrastus reports, thinks that an eclipse also occurs when bodies under the moon screen it.

## A78

**Aëtius 2.16.1**: Anaxagoras, Democritus, and Cleanthes say that all the stars move from the east to the west.

## A79

**Achilles *Introduction to Aratus's Phenomena*** 13 p. 40.26 M: Neither Anaxagoras nor Democritus (in the *Great World Order*) suppose that the stars are living beings.

## A80

**Aristotle *Meteorology* 1.8 345a25**: The Anaxagoreans and the Democriteans say that the Milky Way is the light of certain stars. They say that when the sun travels under the earth, it does not shine on some of the stars. Now, the light of stars that are illuminated by the sun is not

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edition of Plutarch) says, 'Diogenes Laertius quotes Timaeus to the effect that Heraclides Ponticus spoke of the fall of a man from the moon' (159).

34 The text here is very difficult; for the problems, see DG 53–54.

apparent to us (for that light is blocked by the rays of the sun). The Milky Way is, then, they say, the distinctive light belonging to those stars that the earth screens so that the sun does not shine on them.
**Aëtius 3.1.5** (The Milky Way): Anaxagoras says that the shadow of the earth falls on this part of the sky whenever the sun is under the earth and so does not illuminate all of the sky.

## A81

**Aristotle *Meteorology* 1.6 342b25**: Concerning comets: . . . Anaxagoras and Democritus say that comets are the conjunction of planets, whenever they appear to touch each other because they come close.
**Aëtius 3.2.2**: Anaxagoras and Democritus say that comets are the conjunction of two or more stars so that they shine together.
**Scholium on Aratus's *Phenomena*** p. 545.20 M: Democritus and Anaxagoras say that comets are formed when two planets approach one another, through the union of their light into one, just as when mirrors reflect each other.

## A82

**Aëtius 3.2.9**: Anaxagoras says that the so-called shooting stars fall away from the aether in the manner of sparks. This is why they are immediately extinguished.

## A83

**Seneca *Natural Questions* 7.5.3**: Again, in that book which he wrote about comets, Charmander says that a great and extraordinary light in the sky the size of a great beam of timber was seen by Anaxagoras and that it shone for many days.

## A84

**Aristotle *Meteorology* 2.9 369b14**: (On lightning and thunder and people who say that lightning is fire in the clouds): Anaxagoras says the fire comes from the upper aether (that is what he calls fire), having descended from above. The gleam of this fire is lightning, and thunder is the noise and the hissing as the fire is quenched. He says that these things occur just as they appear to, and that lightning is prior to thunder.
**Aëtius 3.3.4**: Anaxagoras says that whenever the hot falls into the cold (this is when part of the aether falls into the airy region), it makes thunder by the noise and lightning by the colour in comparison with the dark of

the cloud-form. Further, it produces the thunderbolt by the extent and intensity of the light, a typhoon by fire composed of many more particles, and the fiery waterspout by fire mingling with clouds.
**Seneca *Natural Questions* 2.12.3**: On lightning: Anaxagoras says that it is drawn off from the aether and that many sparks fall from so much heat in the sky; the clouds surrounding the sparks retain the heat for some time. **2.19**: On thunder and lightning: Anaxagoras says that these are produced in the following way: some force penetrates the lower regions [of the sky] from the aether in such a manner that when the fire is driven against the cold clouds it makes a noise. Moreover, when the fire breaks up the clouds it flashes; a lesser force of fire makes lightning and a greater force makes lightning bolts.

## A85

**Aëtius 3.4.2**: Anaxagoras explains clouds and snow in nearly the same way as Anaximenes (cf. Anaximenes A17), but Anaxagoras says that hail is produced whenever water droplets are pushed towards the earth from frozen clouds, are chilled, and become round by their descent.
**Aristotle *Meteorology* 1.12 348b13**: Anaxagoras says that hail forms whenever a cloud ascends into the cold air; but we say that hail forms whenever a cloud descends into hot air. **348a14**: It seems to some that the cause and the origin of hail is this: When a cloud is pushed into the upper region, which is colder because there the reflections of the rays of the sun from the earth cease, the water freezes once it arrives there. For this reason, they think that hailstorms occur more often in summer and in hot places, because the greater heat pushes the clouds higher up from the earth. [According to Alexander of Aphrodisias, Aristotle is thinking of Anaxagoras here; see Alexander's *Commentary on Aristotle's Meteorology* 49.13.]

## A86

**Aëtius 3.5.11**: Anaxagoras says that the rainbow is a reflection of the sun's radiance by a dense cloud, and that it is always placed right opposite the star [the sun] that it is reflecting. The so-called mock suns that occur in the region of the Black Sea are explained in nearly the same way.

## A86a

**Scholium on Aeschylus *Prometheus Bound* 88**: According to Anaxagoras, the winds come from the earth, and according to Homer, 'from the clouds of Father Zeus' [*Iliad* 2.146]. Anaxagoras gives the material cause of the

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**Herodotus** *Histories* **2.22**: And the third view is by far the most persuasive, but it is the most mistaken. For this explanation is false, since it claims that the Nile flows from melting snow ...

## A92

**Theophrastus** ***On the Senses* 27ff.** (D.507): Anaxagoras says that perception occurs through opposites, for the similar is unaffected by the similar. He attempts to distinguish each [sense] by its own character. Sight occurs through a reflection in the pupil of the eye; there is no reflection in something of the same colour, but rather in what is of a different colour. Now in many animals, the difference in colour occurs during the day, but for some it is at night, so they are sharp-sighted then. Generally, night has the same degree of darkness as the eyes. Reflection occurs in the day, because light is a contributing cause of reflection. Strong colours are always more strongly reflected in their opposite. (28) Touch and taste make distinctions in the same way: something that is hot and cold to the same degree neither heats nor cools when it is near something else, nor do we recognize sweet and bitter by these qualities themselves, but cold is perceived by hot, fresh by brackish, sweet by bitter, according to the deficiency of each (for he says that all things are already present in us). It is the same for smell and hearing: the one operates by inhalation, the other through the penetration of sound far into the brain (the surrounding bone is hollow, and the sound penetrates into it). (29) All perception is accompanied by pain. This would seem to be a consequence of his hypothesis, for everything that is unlike produces irritation when it is touched. This is clear in perception over long periods of time and at excessive levels. For bright colours and very loud noises cause pain and one is not able to stand them long. Larger animals perceive more and in general perception is proportional to the size <of the sense organs>. Those animals that have large, clear, bright eyes see large and distant things; it is just the opposite for those with small eyes. It is the same for hearing. (30) Large animals hear large and distant perceptibles, while the smaller ones elude them, and small animals hear small and near perceptibles. It is also the same for smell: thin air has more odour, since air takes on an odour when heated and rarified. When a large animal inhales, it breathes in both the rare and the dense, but a small animal draws in the rare by itself; and therefore the large animals perceive more. For scent is stronger when it is near rather than far away because it is denser; when dispersed, it is weaker. One might even say that the large animals do not perceive rare air, while the small ones do not perceive the dense ... (37) Anaxagoras then, as was

said, maintains this sort of common and old-fashioned belief. Except that he says something of his own about each individual sense and especially concerning sight, because he says that size is perceptible, he is not clear on the more tactile senses ... (59) Anaxagoras spoke superficially about colours.

## A93

**Aëtius 4.3.2** Is the soul a body and what is it?: Anaximenes, Anaxagoras, Archelaus, and Diogenes say that it is like air. **4.5.11**: about the *hegemonikon* (the ruling part of the soul): Pythagoras and Anaxagoras ... say that *Nous* enters in from without. **4.7.1**: Pythagoras, Anaxagoras, and Diogenes asserted that soul is indestructible. **4.9.6**: Parmenides, Empedocles, Anaxagoras, Democritus, Epicurus, and Heracleides hold that each of the various sensations occur because of the symmetry of pores, with each of the appropriate objects of sensation fitting in each perceptual pathway.

## A94

**Aristotle *Nicomachean Ethics* 7.15 1154b7**: An animal is always in distress, as the natural philosophers also testify when they claim that seeing and hearing are painful.

**Aspasius: *Commentary on Aristotle's* Nicomachean Ethics 156.14**: Anaxagoras said that an animal is always in distress because it perceives. But Aristotle says these things, not because he agrees with them, but because he is reporting them, since it did not in truth seem to Aristotle and Theophrastus that a living thing is always in some distress. In his *Ethics* Aristotle criticizes Anaxagoras, as does Theophrastus, saying that pleasure drives out pain – at least the opposing pleasure does so ...

**Aëtius 4.9.16**: Anaxagoras says that all perception is accompanied by distress.

## A95

**Cicero *Academica Post.* 1.12.44**: Arcesilaus took every argument upon himself, not out of obstinacy or zeal for victory but because of the uncertainty of those matters that had led Socrates to a confession of ignorance and – even before Socrates – Democritus, Anaxagoras, Empedocles, and nearly all those ancients who said that nothing can be cognized, nothing perceived, nothing known. They said that the senses are limited, minds are feeble, the span of life is short, and that, as Democritus says, truth is submerged in the depths [68B117], all things are held as opinion and

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together, use them as we will. There is nothing of chance here, but all is wisdom and forethought.[46]

### A103

**Aëtius 5.25.2**: Anaxagoras says that sleep is produced by weariness from bodily activity; for it is an affection of the body, not one of soul. Death is the separation of soul [from the body].

### A104

**Galen *On the natural faculties* 2.8**: For if it is correct to raise *this* question [about the nature of bile], why do we not *also* investigate blood: is its origin in the body or it is intermingled with foods, as those who posit the homogeneous stuffs claim?

### A105

**Aristotle *On the Parts of Animals* 4.2 677a5**: Anaxagoras and his followers are wrong to suppose that the gall bladder is the cause of acute diseases because it spurts out on the lung, the veins, and the ribs when it is over-full. For, as would become obvious in dissections, those who have these diseases almost always do not have a gall bladder.

### A106

**Aëtius 4.19.5**: Anaxagoras says that sound occurs when blowing air collides with stable air; it recoils from the impact until it reaches the ears. What is called an echo also occurs this way.

### A107

**Aristotle *On the Generation of Animals* 4.1 763b30**: Some, such as Anaxagoras and others of the natural philosophers, say that the opposition is already in the sperm. For the sperm comes from the male, while the female provides the place, and the male is from the right parts and the female from the left parts of the father, and males are in the right side of the uterus, the females in the left.

46 Plutarch is in the midst of comparing humans with animals. Although animals have much greater physical and perceptual abilities, human beings can master them through the use of 'experience and memory and wisdom and art.' The phrase in quotation marks was given by Diels as B21b. Following other scholars, I have placed the passage in the testimonia. There are textual problems here; I read *σφῶν τι* instead of *τε*; *ἔργῳ* is uncertain.

**Censorinus *On Birthdays* 5.2**: But some reject this view [that semen is formed in the marrow], for instance, Anaxagoras, Democritus, and Alcmaeon of Croton. They say that after strenuous activity, not only the marrow but also the fat and much of the flesh is reduced. There is also disagreement whether offspring are produced from paternal seed alone, as Diogenes, Hippon, and the Stoics write, or also maternal seed, as is maintained by Anaxagoras and Alcmaeon, also by Parmenides, Empedocles, and Epicurus.

## A108

**Censorinus *On Birthdays* 6.1** [On what is formed first in an infant]: Anaxagoras says: the brain, from which all the senses arise.

## A109

**Censorinus *On Birthdays* 6.2**: There are those who, following Anaxagoras, think that aetherial heat in the semen orders the limbs.

## A110

**Censorinus *On Birthdays* 6.3**: It seems to Anaxagoras, as to many others, that food is administered through the umbilical cord.

## A111

**Aëtius 5.7.4**: Anaxagoras and Parmenides say that the sperm coming from the right side is deposited into the mother's right side, that from the left into the left. But if the discharges are changed around, females are produced.

**Censorinus *On Birthdays* 6.6**: Anaxagoras and Empedocles agree that males are produced by semen coming from the right testicle, and females from the left. Although they concur in this, their opinions divide on the question of the resemblance of offspring to their parents. **6.8**: Anaxagoras concluded that children resemble that parent who had bestowed the greater amount of seed.

## A112

**Aëtius 5.19.23**: The Epicureans ... say that living things come to be by means of change in each other, for they, too, are parts of the world-order (*kosmos*); according to both Anaxagoras and Euripides, 'not one of the things that come to be dies, but separating off from one another, they

exhibit different form.' Cf. Euripides *Chrysippus* fr. 839:

Greatest Earth and aether of Zeus,
he, progenitor of men and gods,
she, receiving moistening drops of rain,
gives birth to mortals,
gives birth to food and to the tribes of beasts,
whence not unjustly
she is considered the mother of all.
The things grown from the earth return
to the earth,
The buds from the aetherial seed
Return to the heavenly vault.
Not one of the things that come to be dies,
But separating off from one another,
They exhibit different form.

## A113

**Irenaeus *Against Heresies* 2.14.2**: Anaxagoras, who has also been called an atheist, propounded as dogma that animals are made by seeds falling to the earth from the sky.

## A114

**Aristotle *On the Generation of Animals* 3.6 756b13**: There are some who say that the raven and the ibis copulate through the mouth, and that among the quadrupeds the weasel gives birth through the mouth. Anaxagoras and some others of the natural philosophers claim this, but they speak altogether too superficially and credulously.

## A115

**Aristotle *On Breath* 2 470b30** [On respiration in lungless animals]: Anaxagoras and Diogenes, who hold that all animals breathe, say that fishes and oysters breathe in a fashion. Anaxagoras, for instance, says that when fish bring in water through their gills, air is generated in the mouth, and the fish draw this in and breathe, for there is no void.

## A116

**Plutarch *Natural Questions* 1.911d**: The Platonists, Anaxagoreans, and the Democriteans suppose that a plant is an earth-bound animal.

## A117

**Theophrastus *On Plants* 3.1.4**: Anaxagoras maintains that the air contains seeds of all things and that these seeds, carried down together in rain, generate plants. [Theophrastus mentions this view again at *On the Causes of Plants* 1.5.2; Varro repeats the claim at *On Farming* 1.40.1, and indicates that it comes from Theophrastus' reports]

**[Aristotle] *On Plants* 1.1 815a15**: Anaxagoras and Empedocles say that plants are moved by desire and they also assert that they sense and can be made sad and happy. Anaxagoras said that they are animals and feel joy and sadness, taking the fall of their leaves as evidence . . . **815b16**: Anaxagoras and Democritus and Empedocles used to say that plants have intellect and intelligence. **816b26**: Anaxagoras said that a plant has respiration. **817a23**: The source of food for plants is the earth and the source of the generation of fruits is the sun. For this reason Anaxagoras said that their coolness derives from the air and [Alcmaeon] said that earth is the mother and the sun is the father of plants.[47]

47 This text follows DK, except for the following: The crux in the text, *lechinoeon*, is almost certainly a corruption of 'Alcmaeon.' See A. Lebedev, 'Alcmaeon on Plants: A New Fragment in Nicolaus Damascenus,' *La Parola del Passato* 48 (1993) 456–60, anticipated by G. Kirk, 'A Passage in *De Plantis*,' *Classical Review* NS 6 (1956), 5–6.

PART THREE

# Essays

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erected a memorial inscription to him. There is general agreement that Anaxagoras was born about 500 BC (the report in Diogenes Laertius says that he was twenty 'at the time of Xerxes' invasion' – that is, in 480 BC), and lived for about seventy years (Diogenes Laertius, following Apollodorus, says seventy-two). Thus, he belongs to the generation of Greek thinkers of the fifth century who succeeded Parmenides and preceded Socrates and Democritus. This essay explores Anaxagoras's biography, his intellectual background, and his influence on later philosophers. These discussions will introduce some of Anaxagoras's theories, and these will receive fuller treatment in the Essays that follow. In addition, this Essay focuses on problems in interpreting later reports about Anaxagoras and his views.

## 1.1 Anaxagoras's Life

Few details of Anaxagoras's life are certain. The doxographic writings concerning the publication of his book, his arrival in Athens, what he did there, and when (and under what circumstances) he left the city, are both confused and confusing.[2] In addition, many stories about Anaxagoras or reports of his sayings are almost certainly apocryphal; either they illustrate certain of his philosophical views, or they attribute to him the typical otherworldliness of philosophers and the sagacity of one who understands the heavens and their workings.[3] The ancient Greek chroniclers and biographers were not obsessed with historical accuracy (and specific information on dates and events in a philosopher's life were, after all, hard to come by); rather, they were keen to tell a good story, link famous people with the dates of important events, and provide successions (particularly of the teacher-pupil variety). The typical biography assumes that a famous person reached his 'acme' in his fortieth year (this is particularly true of the dates calculated by Apollodorus), and calculates birth and death dates from that year, also attempting to link the famous man with a momentous event at some time in his life (hence, perhaps, the claim that Anaxagoras was

2 The standard English-language histories of Presocratic philosophy (Guthrie in *History*, KRS, Barnes in *Presocratic*) provide treatments of the biographical testimonies; all reach different conclusions. Sider (*Fragments*) gives a judicious survey of the evidence; very detailed discussions can be found in Mansfeld ('Chronology') and in Woodbury. Both have careful and exhaustive treatments of both the ancient evidence and modern literature (with full references for those who wish to pursue the topic further); they reach quite different conclusions about Anaxagoras' arrival in, stay in, and departure from Athens.

3 Recall the similar stories told about Thales: there are tales both that he fell down a well while stargazing (Plato *Theaetetus* 174a4–b1) and that he made a fortune by using his meteorological knowledge to predict a bumper olive crop (Aristotle *Politics* 1259a6–19).

twenty when Xerxes invaded Greece).[4] The information that has reached us has gone through a number of sources, with later writers such as Diogenes Laertius (ca 200 AD), Hippolytus of Rome (ca 200 AD), and Eusebius (ca 260–340 AD) relying on earlier historians and chroniclers such as Stesimbrotus, who worked in Athens in the late fifth century BC; and Apollodorus of Athens (ca 150 BC), who himself relied on earlier writers.[5] Anaxagoras was particularly interesting to the chroniclers of Athens because of his reported connections with Themistocles and Pericles. Stories about him turn up in these sources in the context of accounts of the great men, but such writers were not necessarily concerned with his philosophical views or even with historical accuracy. Fortunately for students of ancient Greek philosophy, most of these confusions and inconsistencies do not seriously affect our understanding of Anaxagoras's philosophical views.

Anaxagoras was philosophizing in Athens by the middle of the fifth century. Jaap Mansfeld has suggested the following chronology, based on Diogenes Laertius' text. Anaxagoras was twenty at the time of Xerxes' invasion. He came to Athens and 'began to philosophize' in 456/5 BC when Callias was archon, staying there twenty years (Diogenes Laertius also reports that some say thirty).[6] Mansfeld argues for a publication date for Anaxagoras' book of about 440 BC, and states that 437/6 is probably correct as the time of Anaxagoras's trial and departure from Athens (the date given by both Apollodorus and Demetrius of Phaleron).[7] This gives Anaxagoras almost ten years in Lampsacus, time enough for him to become the much-revered public figure that the stories told about him would suggest.

4 Of course, Anaxagoras might indeed have been twenty that year. Woodbury argues for a chronology that connects Anaxagoras's arrival in Athens with the Persian invasion; he argues that this would explain reports that Anaxagoras was connected with Themistocles (who died in 450 BC) and reports that Anaxagoras was charged with Medism (support for the Persians) at his trial.

5 Many of these works survive only as reports or fragments preserved in other writers, and there are internal inconsistencies and problems with texts, as well as discrepancies between reports by various writers. For discussions of the reliability of various sources and attempts to untangle the ancient evidence see Mansfeld ('Chronology'), O'Brien ('Relation'), and Woodbury.

6 Mansfeld ('Chronology') posits a short lacuna in Diogenes Laertius's text to indicate the stay of twenty years. He argues that the dates ultimately come from Demetrius of Phaleron and Apollodorus (whose *Chronicles* are used extensively by Diogenes Laertius), and fit Apollodorus's overall pattern of important dates and links between famous Athenians (or visitors to Athens).

7 Mansfeld's chronology is accepted by Schofield in his *Routledge Encyclopedia* article. It is rejected by Woodbury and Sider (*Fragments*), both of whom argue for an earlier appearance in, and departure from, Athens. We should recall that 'publication' was much less formal in the ancient world than it is in the modern.

Anaxagoras enjoyed a certain degree of fame (or notoriety) in the ancient world. About 467 BC a large rock fell from the sky at Aegospotami;[8] later chroniclers link Anaxagoras's name with the fall – often saying that he predicted it (see A1 (10), A6, A10, A11, A12). In his book he offered explanations for meteors and comets; his view was that the stars and other heavenly bodies are whirling red-hot stones snatched up from the earth and held in place by the cosmic whirl. Plutarch (A12) explicitly links the stories about the prediction with Anaxagoras's scientific explanations, saying that because of slipping or shaking, heavenly bodies could indeed fall from the sky.[9] Plutarch also notes that Daimachus reported that there was a comet blazing in the sky for seventy-five nights before the meteorite fell.[10] Anaxagoras's view that the celestial bodies are blazing stones and the sun a fiery mass of red-hot metal was notorious; reportedly it was this account of the heavenly bodies that resulted in the charges of impiety (although there may well have been political motives as well, just as there were in Socrates' later trial on similar charges).[11] While in Athens, Anaxagoras was connected with both the political and intellectual elite. The friendship with Pericles seems well established, and there are reports of an association with Themistocles (although chronological difficulties affect this claim).[12] Some have seen evidence of Anaxagoras' teachings in the plays of Aeschylus, and in the ancient world it was said that Euripides was his pupil, with echoes of Anaxagoras being found in his works as well.[13]

8 'Aegospotami' ('Goat River') is the name of both a town and a river in the Thracian Chersonnese.

9 In the testimonia, other sorts of predictions are linked with Anaxagoras's name; for instance, foretelling showers in the dry season at Olympia (A1 and A6). Hippolytus ends his discussion of Anaxagoras with the claim: 'They say also that he was a prognosticator' (A42).

10 Although some meteorite showers are now predictable, the fall of a particular meteorite at a particular place and time could not have been predicted by Anaxagoras. Moreover, meteorites are not derived from comets, although the reported coincidence of the two phenomena may have lent credence to stories about Anaxagoras' prediction.

11 In *Clouds*, Aristophanes satirizes the new learning of the Sophists and the physicists (such as Anaxagoras). In Plato's *Apology*, Socrates refers to Aristophanes' comedy and accuses Meletus of trying to link his views with those of Anaxagoras (see A35).

12 Again, for full discussions, see Mansfeld ('Chronology') and Woodbury.

13 As evidence of Anaxagoras's influence on Aeschylus, scholars cite the *Eumenides* (657–66), the *Supplices* (559–61), and Fr. 300, where notions that are also found in Anaxagoras occur. (For discussions of the possibility of influence, see Rössler.) If Mansfeld is right about the chronology, and if the hypothesis of influence is correct, then Aeschylus must have known Anaxagoras's work before Anaxagoras arrived in Athens. Mansfeld notes that the material in Aeschylus may not have come from Anaxagoras, and, in any case, it does not imply that Aeschylus got the information

The relation of Anaxagoras to his philosophical contemporaries remains mysterious. The most perplexing (and frustrating) questions involve the chronological relation of Anaxagoras to Empedocles and to Zeno, and the question of whether or not Socrates and Anaxagoras ever met. Aristotle gives us intriguing information in the *Metaphysics* (A43): 'Anaxagoras of Clazomenae, *proteros* than Empedocles in age, but *husteros* in his work, says that the principles are unlimited.' Unfortunately, Aristotle's comment is ambiguous. The two Greek words would normally be taken to mean, on the one hand, 'prior' or 'earlier' (*proteros*) and, on the other, 'later' (*husteros*); Aristotle might be saying that although Anaxagoras was older than Empedocles his work was published after Empedocles'. Others, including Alexander of Aphrodisias, in his commentary on the *Metaphysics*, interpret Aristotle as saying that Anaxagoras's work was inferior (a possible meaning of *husteros*).[14] I take the two words to be parallel, and temporal in sense.[15] Anaxagoras and Empedocles were probably active at about the same time, and both were clearly working within a Parmenidean framework. Anaxagoras' work is more straightforwardly metaphysical and cosmological than Empedocles' (which has religious and ethical strains peculiar to Empedocles himself). If, as is possible, Anaxagoras was working

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directly from Anaxagoras or from an already published book. See Mansfeld 'Chronology' and his review of Schofield for further elaboration. The ancient historians were always happy to find teacher–pupil relations; the presence of material that sounds Anaxagorean in Euripides should not be taken to imply any formal relation between them. O'Brien ('Relation') discusses in detail the possibility of Anaxagoras's influence on Empedocles.

14 Alexander, *in Met.* 27–28; esp. 28.2–3. Aristotle indeed seems to have preferred Empedocles' theories to those of Anaxagoras. The most forceful contemporary proponent of this interpretation of ὕστερος is O'Brien, in 'Relation,' who also argues that Anaxagoras influenced Empedocles, relying particularly on theories of vision (see his 'Derived Light'). Claims of influence are extremely difficult to prove; see Mansfeld's response to O'Brien in 'Chronology.' Without some argument about influence, the passage does not support a claim of temporal priority for Anaxagoras, for Aristotle could certainly have thought that Anaxagoras was both later in time and an inferior philosopher. Ross, in his commentary on the *Metaphysics*, follows Alexander's understanding, but concedes that 'it is quite possible to take ὕστερος in its literal sense' (1:132).

15 Even if Aristotle is claiming that Anaxagoras's work became known later than Empedocles', Anaxagoras could well have begun philosophizing before Empedocles. I originally took Anaxagoras's work to have preceded Empedocles' (in *Legacy*), but took no stand on the question of influence; it now seems to me better to take Aristotle's claim here in the more straightforward temporal sense. In *Met.* 1, Aristotle is canvassing his predecessors' views about causes; in this passage he seems to be explaining why, even though Anaxagoras was older than Empedocles, he mentions Anaxagoras *after* Empedocles. The interpretation I give here takes the two adjectives to be parallel; this is, I now think, the most natural reading of both the grammar and Aristotle's comment.

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the dialogue, does not really have anything very substantial to say about the nature of mind or soul as a teleological cause himself.[20] So, we do not know whether Anaxagoras and Socrates met, fascinating though such an encounter would have been.[21]

Both Anaxagoras and Socrates were tried for impiety. Anaxagoras's claims that the heavenly bodies were stones no doubt played some role in the charges; his naturalism was notorious. In A16 Plutarch reports that because of his association with Anaxagoras Pericles rejected religious superstition and embraced natural philosophy. Plutarch recounts that the head of a one-horned ram was brought in from the country. Lampon the soothsayer claimed it was a divine sign, while Anaxagoras had the skull cut in half and gave a rational explanation of the phenomenon. Plutarch's version of the story says that Anaxagoras was much admired for this, although Plutarch suggests that the admiration was fleeting and tied to the changing politics of the day. Although there are several versions of Anaxagoras's trial and its outcome (see Diogenes Laertius in A1, for instance), and some scholars even deny that Anaxagoras was tried by the Athenians, there seems little reason to doubt the tradition on this question. Whether the case was brought for purely religious reasons or whether it was an attempt to undermine his friend and patron Pericles is unclear. Probably, as in the later cases of Socrates and Aristotle, there were both politics and outraged piety involved. Some testimonia say that he was fined and banished, others that he was condemned to death (though spared through the intervention of Pericles). In any case, the biographies say that he left Athens and lived out his life in Lampsacus, where he was respected and honoured (a statue was erected in his honour, and at his request, children were granted a holiday on the anniversary of his death).

Despite Socrates' reference to Anaxagoras's 'books' in the *Apology* and the *Phaedo* (A35 and A47), it is probable that Anaxagoras's teachings were contained in a single book (in A37 Diogenes Laertius lists Anaxagoras among those who published only one book). Schofield suggests that the

20 Socrates is convinced that all good explanations are teleological, but he does not explain why this must be so. He also claims that soul and life are always connected, but the argument is not strong. Moreover, insofar as it lacks a teleological element, Socrates' hypothesis about Forms as causes or explanations in the *Phaedo* is introduced as a 'second best' theory.

21 See also Mansfeld's comment: 'The Platonic Socrates never meets Pericles or such fascinating members of Pericles' circle as Phidias, and he is only reported to have had, not a discussion with, but lessons from, Aspasia, at a "dramatic" time when both had long been dead' ('Chronology' 299). The reference is to the *Menexenus*, whose dramatic date seems to be some time after the Corinthian war of 395–387.

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This index includes modern authors; for ancient authors see the General Index and the Index Locorum.

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