Classical Quarterly **47** (i) 227–238 (1997) *Printed in Great Britain*

PLUTARCH ON THE PROBABLE PRINCIPLE OF COLD: EPISTEMOLOGY AND THE *DE PRIMO FRIGIDO*[1]

I

The *de primo frigido* has long been recognized as an important text for our understanding of Plutarch's epistemological position. It is the aim of this paper to show, however, that the sophistication of the work, and with it of Plutarch's epistemology, is not generally given the credit due to it.

The main body of the *de prim. frig.* consists of a debate marshalled along overtly sceptical lines over whether it is air, water, or earth which constitutes the οὐσία of coldness: which element, in other words, is the πρώτως ψυχρόν. Plutarch first considers the arguments in favour of air (whose candidature was championed by the Stoics); next those in favour of water (whose named champions are Empedocles and Strato); and finally (*in propria persona*) those in favour of earth. The brief conclusion (at 955C) is phrased in the following terms as an exhortation to Favorinus, the dedicatee of the work:

> Compare these arguments [i.e. the arguments in favour of earth], Favorinus, with those put forward by the others; and if they are no less probable, and if they do not greatly exceed them in plausibility, bid farewell to opinions (δόξας), considering that it is more philosophical to suspend judgement than to assent [sc. to the claims of one party] in matters that are unclear (ἐν τοῖς ἀδήλοις).

This passage has become a *locus classicus* for the claim that Plutarch advocated a form of radical scepticism—the claim that he himself believed that, in matters such as this at least, ἐποχή (suspension of judgement) was the only reasonable course a person could take.[2] The idea is that, however plausible the arguments in favour of one of the elements might be, there are equally plausible arguments in favour of the others. However, this interpretation glosses too quickly over what Plutarch actually

[1] This paper partly develops a suggestion for an interpretation of the *de primo frigido* that I originally made in my article 'Thyrsus-Bearer of the Academy or Enthusiast for Plato? Plutarch's *de Stoicorum repugnantiis*', in J. Mossman (ed.), *Plutarch and His Intellectual World* (London, 1997), pp. 41–58, and also completes the account of Plutarch's epistemology that I argued for there.

[2] See e.g. J. Schröter, *Plutarchs Stellung zur Skepsis* (Leipzig, 1911), p. 21; K. Ziegler, 'Plutarchos von Chaironeia', *RE*, vol. XXI.I, col. 856; W. C. Helmbold, p. 227 of his Loeb edition of the *de prim. frig.* (*Moralia* vol. XII); J. Glucker, *Antiochus and the Late Academy* (Göttingen, 1978), pp. 287–8; and J. Dillon, '"Orthodoxy" and "Eclecticism": Middle Platonists and Neo-Pythagoreans', in J. Dillon and A. A. Long (edd.), *The Question of "Eclecticism"* (Berkeley, 1988), pp. 103–26, esp. p. 107 note 9. P. Donini argues against an attribution of radical scepticism to the *de prim. frig.* as a whole (see 'Lo scetticismo Academico, Aristotele e l'unità della tradizione platonica secondo Plutarco', in G. Cambiano (ed.), *Storiografia e dossografia nella filosofia antica* [Torino, 1986], pp. 203–26, esp. pp. 209–12); but this is because he thinks that there is the possibility of a more positive, 'metaphysical' solution opened up by the appeal to the 'triangles' of Plato's *Timaeus* in *de prim. frig.* ch. 8. This is something that seems to me rather difficult to maintain, for although Plato's triangles are the ultimate principles of the physical world (Donini rightly draws attention to 948B), there is no suggestion that they rank with forms, for example, as actually *metaphysical* entities, and the fact that they are constituent parts of the physical world actually argues against this possibility. Their non-perceptibility alone certainly does not suffice to push them into a higher ontological category.

says. For he does not say without qualification that we should 'bid farewell to opinions' and suspend judgement over this or any other issue; he does not even say that this is what he does. Rather, he says that *if* no one position emerges as more plausible than the others (or, conversely, if no one position emerges as less plausible than the others), *then* we should consider the matter unclear and suspend judgement. From this alone we cannot infer that Plutarch thought no clear winner had emerged from the preceding debate: he might just as well have thought that one *had*. And if this turns out to be the correct interpretation, then not only can *de prim. frig.* 955C not be used as evidence for attributing a radical scepticism to Plutarch, but it may in fact be evidence for attributing to him a more positive form of epistemology, in which argument on both sides of a question may lead us to a view on what the answer is which, however tentative, will still be a positive view. In what follows I hope to show that this is the correct conclusion, and that, in particular, Plutarch wants us to conclude from the debate that earth is—probably—the principle of cold.

One reason why it seems at the outset attractive to argue for the 'probabilist' reading of the conclusion of the *de prim. frig.* is the simple fact that it would seem to answer best to the wider requirements of Plutarch's philosophy. It is true that Plutarch demonstrated great sympathy with the Sceptical Academy;[3] but it is also clear that there were many issues on which he was prepared to express positive views—views which, as he saw it, were in agreement with those of Plato (one need only think of his commentary on the *Timaeus*, the *de animae procreatione in Timaeo*, for a clear example of this). It is necessary, then, to look more closely at the nature of Plutarch's philosophical position as a whole to see how these two apparently conflicting epistemological positions might be reconciled.

A survey of Plutarch's more positive philosophical writings quickly reveals that he saw reality divided into two ontological realms, and that he thought of these realms in distinctly Platonic terms. The sublunary world is to be carefully distinguished from a superior, metaphysical realm on which it depends. In the *de Iside et Osiride*, for example, the sublunary world is described as a 'mirror' of divine activity (382AB).[4] But this ontological distinction has obvious consequences for Plutarch's approach to questions of epistemology. In particular, we would expect Plutarch to make a parallel subordination of knowledge of the sensible world to knowledge of the metaphysical realm. And, indeed, this subordination is explicit in *de Is. et Os.* 382AB, where the ontological reliance of the sensible world on the realm of the divine means that the former can be used as an epistemological 'tool' in the quest for knowledge of the latter—but is not an object of true knowledge itself. (Cf. also *de E* 392AB.) This highly Platonic account is confirmed by Plutarch's adoption of a theory of ἀνάμνησις according to which objects of sense-perception

[3] This is especially clear from some of the titles of Plutarchean works now lost: e.g. *Lamprias* nos. 45 (*On Arguing Both Sides*), 64 (*On the Difference Between the Pyrrhonians and the Academics*) and 71 (= 131?) (*Concerning the Fact that Prophecy is Not Disproved by the Academics*). But cf. also the *de communibus notitiis*, which is set up as a defence of the sceptical Academy; and *de Stoicorum repugnantiis* 1037BC, where Plutarch defends the actions of 'those who suspend judgement' (οἱ ἐπέχοντες).

[4] The point of this passage is actually to assert that the image of the divine is *more* to be found in living creatures, and that these are *clearer* mirrors (ὡς ἐναργεστέρων ἐσόπτρων) of god's activity. But this only confirms the ontological subordination to the metaphysical realm of the sublunary world as a whole.

can be used by the philosophical soul to help it recollect divine truths. See fr.216 (g) [Sandbach]:[5]

> Souls are overcome by much drowsiness at birth and need much therapeutic exercise if they are to recollect (*πολλῆς πρὸς ἀνάμνησιν δέονται τῆς μοχλείας*). And this is why they require sense-objects.

Of course, this does not mean that knowledge of the metaphysical realm is easy to achieve, and in fact Plutarch displays a great deal of caution in discussing metaphysical issues. Nevertheless, he clearly thinks that true knowledge of this realm is in principle available to the philosopher.[6]

From the foregoing it should be clear that, although the sensible world is ontologically inferior to the metaphysical realm, it still has a positive role to play. Sense impressions have their own epistemological integrity—Plutarch frequently refers to their 'clarity' (*ἐνάργεια*)—and it is because of this that they can be used in the philosophical endeavour of recapturing metaphysical, or divine, truths.[7] The position we arrive at, then, is this: Plutarch thinks that true philosophical knowledge is available in respect of the metaphysical realm, but only in respect of the metaphysical realm. So, to the extent that he denies the possibility of true knowledge of the sensible world, Plutarch is, indeed, a sceptic. Nevertheless, his scepticism is very different from that of the Academics, or the Pyrrhonians. For Plutarch does not think that the

[5] This fragment is, admittedly, of doubtful attribution, and Sandbach, for one, does not believe it to be Plutarchean: see Loeb *Moralia* vol. XV pp. 388–9 with note (b). However, it is certain that Plutarch held a theory of *ἀνάμνησις* (see *plat. quaest.* 1000DE) and, if nothing else, the fragment quoted encapsulates nicely the position he must have taken. For further texts on this point, see frr. 215–7 [Sandbach] with, on 215 (d) in particular, D. Scott, 'Platonic Anamnesis Revisited', *CQ* 37 (1987), 346–66. There may also be an allusion to the theory of *ἀνάμνησις* at *quaest. conviv.* 629DE, where Plutarch apologizes if, years after the event, he treats things friends once told him as if he had just thought of them himself. Often, he says, learning something and recollecting are the same in effect: *πολλάκις εἰς ταὐτὸ τῷ μανθάνειν τὸ ἀναμιμνήσκεσθαι καθίστησιν.*

The following caveat should be noted: many of the fragments—especially those collected under 217, which, ironically, even claim to be 'proofs that learning is recollection'—in fact appeal to memories of past incarnations, something which has nothing to do with *ἀνάμνησις* as an epistemological theory. This suggests that the aim of the fragments was simply to prove the pre-existence of the soul rather than to demonstrate 'recollection' of forms. Fr. 217 (a) and (b), far from arguing for the theory of *ἀνάμνησις*, actually presuppose it. All of this, of course, is entirely consistent with the fact that they are derived from a commentary of the *Phaedo*—see Sandbach, loc. cit.

[6] Cf. Donini (note 2 above): he discusses at length Plutarch's frequent displays of *εὐλάβεια* towards theological and metaphysical claims, but draws the conclusion that Plutarch thinks this is *all* that is possible in respect of them. (In general, Donini does not seem to take the transcendence of the metaphysical world in Plutarch very seriously and, for example, blurs the distinction between the physical and metaphysical worlds by suggesting that *εὐλάβεια* in questions of physics is needed because physical questions 'hanno un fondamento o un esito nella sfera dell'intelligibile e del divino' [213].) In fact Donini seems to read too much into the term *εὐλάβεια*. Plutarch does not think that there is a certain class of propositions (e.g. theological propositions) which can only ever be given *conditional assent*. He rather thinks that for *any* kind of proposition (physical or metaphysical) one should not assent rashly, and to this extent one should exercise *caution*. If Plutarch is generally cautious in the metaphysical assertions he makes, this does not show that he thinks unconditional knowledge of metaphysics is, even in theory, unobtainable.

[7] For the 'clarity' and positive usefulness of sense impressions, cf. e.g. *de soll. an.* 966BC, where sense-perception gives us 'clear and unanswerable examples' of what Plutarch seems to take to be an example of a genuinely plausible position. In *de E* 392AB, Ammonius (whose views are presumably meant to represent those of Plutarch as well) talks of the 'great clarity' (*τὴν ἄγαν ἐνάργειαν*) of objects of perception in the very midst of an argument for the strict unknowability of the world.

unavailability of knowledge of the sensible world is a result of the fact that we view the world through a kind of epistemological veil: he does not think either that sense-impressions are of their nature unreliable, or that our senses are poor judges of them. It is rather that the sensible world is just *intrinsically* unknowable, in a strong sense of what it would mean to know something. Our senses allow us to garner information about the world of an epistemic status that is exactly correlative with its ontological status; but its ontological status is itself inferior to that of the divine realm, where alone true knowledge is to be found.

If we can see that Plutarch's scepticism towards the sensible world is founded on quite a different philosophical basis from the scepticism held by his predecessors in the New Academy, it remains true that he saw himself as a legitimate successor of that school. And the key to understanding this must be his belief that 'there has been one Academy since Plato' (cf. *Lamprias* 63). For unless Plutarch believed that Plato was a radical sceptic (which he surely did not), then the only alternative for him is to think that Academic scepticism could be explained as a development of the cautious attitude exhibited by Plato—and adopted by himself—towards the sensible world. Indeed, it would be easy enough for Plutarch to see the work of the New Academy as a defence of Plato's beliefs of the inferiority of the sensible world against the Stoics, who wanted to assert to the contrary that all knowledge was precisely knowledge of the sensible world.

Plutarch, then, seems to have thought of himself as reasserting the Platonist context in which alone he thought the scepticism of the New Academy could be properly understood. But, given that his scepticism in the face of the sensible world was of a kind that allowed him to say *something* positive about it, it remains to ask how he thought this positive information could be sorted out of the many conflicting impressions it throws up. In fact, the Academy furnished one influential brand of scepticism which would seem to be particularly appropriate for Plutarch's purposes, and that is a form of scepticism ascribed to Philo of Larissa.[8]

A description of Philo's epistemology is a complicated matter—he seems to have held three successive positions, ranging from a radical scepticism, differing little if at all from that of Clitomachus, to a form of Dogmatism in his final stage.[9] But it is Philo's second position (in the advocacy of which he is associated with Metrodorus) that is of interest to us. According to this, it is the duty of a philosopher to argue on both sides of any given question since this is the only way in which what truth there is

[8] The suggestion that Plutarch's epistemology was influenced by Philo is far from original, although the form in which this influence is described varies widely. Cf. e.g. Schröter (n. 2 above), pp. 36–7; A. Weische, *Cicero und die neue Academie* (Münster, 1961), esp. p. 79; H. Tarrant, *Scepticism or Platonism? The Philosophy of the Fourth Academy* (Cambridge, 1985), esp. p. 134; A.-M. Ioppolo, 'The Academic Position of Favorinus of Arelate', *Phronesis* 38 (1993), 183–213 esp. 195. Donini disagrees (n. 2 above, 213), but his disagreement comes, I think, largely from a belief that to say Plutarch's epistemological position was *influenced* by Philo would be tantamount to claiming that it was the *same* as Philo's position. In fact I argue below that while Plutarch certainly owes his sceptical methodology to Philo, his view of why the world is strictly unknowable is radically different.

[9] Philo's philosophical development has been the subject of some controversy. Scholars have tended to recognize *two* stages (generally compounding in one way or another what I would identify as the second and third phases of Philo's epistemology): cf. e.g. R. Hirzel, *Untersuchungen zur Ciceros philosophischen Schriften* (Leipzig, 1883), vol. III, pp. 195–341; V. Brochard, *Les Sceptiques Grecs* (Paris, 1887), pp. 192–205; D. Sedley, 'The End of the Academy', *Phronesis* 26 (1981), 67–75. However, see now W. Görler's article 'Philon aus Larissa' in H. Flashar (ed.), *Die Philosophie der Antike* (Basel, 1994), vol. IV, pp. 915–37; C. Brittain, *Philo of Larissa and the Fourth Academy* (unpublished diss., Oxford, 1996).

might be discovered. Now this position had, according to Cicero at least, always been maintained in the Academy (see *Acad.* 2.60); but Philo seemed more confident than his predecessors that a position that was 'more plausible' *would* emerge out of this procedure. The resulting belief could be adopted at least provisionally, and confirmed or weakened depending on the results of further investigation (*Acad.* 2.78). Plutarch certainly seems to have thought that argument on both sides of the question was the only method of inquiry even theoretically capable of arriving at the truth (cf. *de Stoic. rep.* 10, 1037C); and since we have seen that he did believe that positive results were available to him, it makes sense to suppose that it was through this method of inquiry that they became available. Now of course Plutarch will not view the matter in exactly the same terms as Philo had done: Philo presumably believed, with the rest of the New Academy, that if there were true knowledge of anything it would be knowledge of the sensible world, but that we are just cut off from such knowledge. Plutarch, on the other hand, thinks that the notion of philosophical knowledge of the sensible world is a contradiction in terms: the sensible world is just not the kind of thing about which philosophical knowledge is possible. Nevertheless, the method which Plutarch uses to sort out what can be said—what is plausible—from the conflicting and shifting mass of evidence available to the senses does not in effect need to be any different from the method advocated by Philo at this stage in his philosophical career.

It is worth noting that there is no reason why every investigation into both sides of a question should result in the conclusion that one side is more plausible than another; nor do we have to suppose that a position that appears plausible to one person will appear so to someone else. And in those cases where a 'more plausible' position does not emerge from the investigation, then it is the duty of the sceptic to regard the matter as 'unclear' (ἄδηλον) and suspend judgement. There is room for ἐποχή in Plutarch's epistemology, and indeed it may have been Plutarch's explanation of Arcesilaus' universal suspension of judgement that nothing ever *did* strike Arcesilaus as plausible.[10] But the fact is that some things clearly did strike Plutarch as plausible, and it is because of this that he was able to adapt an Academic methodology to his own Platonizing framework: to be at once and in all consistency an Academic and a Platonist.

With this background, it is possible to turn back to the question of how the *de prim. frig.* fits into Plutarch's epistemology. What I want to claim is that this work does not constitute an exhortation to ἐποχή *tout court*: if it did, then it would support the theory that Plutarch was *radically* sceptical. Rather, I want to show that the work is precisely an example of the kind of argument on both sides of the question (or all three sides of the question, in fact) that might after all lead us to a plausible answer. Of course this is not to deny that ἐποχή might be one reasonable response to the debate: as we saw, suspension of judgement remains the appropriate course for a Philonian as well, if his consideration of the evidence throws up no one position that does come across as more plausible than the others. But it remains true that Plutarch's philosophy, even as it pertained to sublunary physics, was characterized throughout by his advocacy of a form of Platonism. And Plato, in the *Timaeus* at least, held a very

[10] In a similar way, of course, suspension of judgement is the appropriate course even for a Stoic when he finds κατάληψις is unachievable, so that the larger epistemological conclusions we can draw from the availability of this option to Plutarch in this work are strictly limited. For Plutarch on Arcesilaus see *adv. Col.* 1121F–1124B. Cf. also *de Stoic. rep.* 10, 1037BC for Plutarch's defence of οἱ ἐπέχοντες.

definite view on which element was primarily characterized by cold: he thought that it was earth.

The fact that Plato believed earth to be principally cold and the fact that it makes sense to characterize Plutarch as a Platonist do not add up to a proof that Plutarch too thought earth was principally cold. After all, there is a suggestion in the *de prim. frig.* itself that Plutarch was capable of making his own emendations to Plato's philosophy. At 948B he suggests that, although the Platonic theory of elemental triangles is on the right tracks, it is perhaps not accurate in all its details. But we have already seen that his own cosmological beliefs were firmly founded on the basis of an interpretation of the *Timaeus*, and this alone might give us confidence to suppose that he believed earth to be principally cold. Note also that the arguments for earth as *πρώτως ψυχρόν* in the *de prim. frig.* are presented as Plutarch's own: he does not distance himself from them by attributing them to Plato, as he attributes the arguments for air to the Stoics and the arguments for water to Empedocles and Strato. Furthermore, Plato had argued that earth was principally cold on the basis of the way in which it was constituted by the triangles (see *Timaeus* 61d5–62c3), and Plutarch is quite forthright in *accepting* that something like the theory of triangles will form the ultimate basis for an explanation of coldness (948BC). It looks increasingly likely that, when we move up to the perceptible level, Plutarch will himself believe that earth is the *πρώτως ψυχρόν*. The remainder of this paper is devoted to an analysis of the *de prim. frig.* which aims to show that this is the inevitable conclusion: more precisely that earth is the principally cold element, that water after this is the element most receptive of coldness, and that air (as in Platonic model) is essentially not cold at all.

II. THE PROLOGUE TO THE *DE PRIM. FRIG.*: 945F–948C

For a work that has been taken to be radically sceptical, the prologue of the *de prim. frig.* is remarkably self-assured. In the first seven chapters (945F–948A), Plutarch considers the suggestion that coldness is a mere negation. But despite the arguments that might be moved in favour of the suggestion, this is certainly not something over which we are invited to suspend judgement. Plutarch's own position is very clear: coldness should not be considered a negation (*οὐκ ἄξιον ἡγεῖσθαι στέρησιν*: 946C).

Plutarch reinforces his position at the end of his discussion of cold as negation by reporting the belief of the 'majority' of thinkers (*οἱ πλεῖστοι*) that, since everything in the universe is composed of the primary elements, qualities too must be explained by them, so that for the four elements (earth, air, fire, water) there must be four corresponding primary qualities. In other words, there is a positive elemental principle for each of the primary qualities, which are taken to be hot, cold, dry, and wet. Now admittedly Plutarch does not tell us outright that he accepts this schema, but there is no argument against it. One *alternative* theory is mentioned, namely that of Anaximenes; but this is capped with a refutation (taken, as it happens, from Aristotle). So it does look as if Plutarch himself agrees with the majority that the primary qualities as he describes them are to be associated with elemental principles.

Finally, in chapter 8 Plutarch asserts that a true *explanation* of coldness will rely on an appeal to the most fundamental level of the world's structure. In particular, we need to base out explanation on first principles in the way that Plato attempted to do with his theory of fundamental triangles (see 948C: this, of course, is an allusion to the discussion in the *Timaeus*). But before it is possible to give such an explanation, Plutarch says that it is necessary to find out which of the four perceptible elements is

principally cold (948CD); and it is the isolation of that element that occupies the rest of the *de prim. frig.*

It is worth asking *why* we should need to look at the perceptible level before we can embark on an investigation of coldness at a more fundamental level: why, in other words, we need to isolate the perceptible element which is the principle of cold before turning to an explanation of coldness in terms of (for example) Platonic triangles. The answer is straightforward: precisely because the triangles are sub-perceptual, we need to infer their mode of operation from the perceptual world of the elements. And the way in which the triangles will be inferred to explain coldness will depend entirely on which element we perceive to introduce coldness into the world. For if air turned out to be the principally cold element, then we would need to posit at the non-perceptible level a configuration of triangles which would explain both the fluidity of air *and* coldness; if earth is the principle of cold, then we would need a configuration that would explain the solidity of earth *and* coldness. This is important, because it means that we could not give an adequate explanation of coldness by an appeal to the fundamental triangles while suspending judgement over which element is primarily cold. This element is the one that is built out of the three-dimensional configuration of triangles that explains the phenomenon of coldness. It follows that, if Plutarch is at all confident of being able to give a triangle-based, non-perceptual account of cold, it is only because he thinks that he has a reasonable chance of isolating the perceptual element which contains the essence of cold.

III. THE MAIN DISCUSSION: 948C–955C

Table I outlines in their barest essentials the arguments of the three sections of the main discussion of the *de prim. frig.*, devoted respectively to the claims that air, water, and earth have to being considered the πρώτως ψυχρόν. It will be noticed that each section is dominated by three main points of consideration: (1) the qualities we expect to find concomitant to coldness; (2) the factors which cause the destruction of the various elements; and (3) the relationship of the various elements to the process of freezing. To all of these headings, numerous illustrations are attached in each case which, for now, I have omitted. Under the headings of water and earth, these three main points are followed by additional arguments—signalled as such in the case of water, which makes a 'fresh start' (ἐξ ὑπαρχῆς) at 951C. Again, I have omitted from the sketch below examples and illustrations strictly dependent on the arguments that are included.

One thing that should be immediately clear even from this sketch is the tremendous imbalance in the space devoted to each element. The arguments for air are found at 948D–949F, and thus cover roughly 1⅓ Holzmann pages. The arguments for water, on the other hand, go from 949F to 952C: 2½ pages, almost twice as much. Earth, finally, has even more space devoted to it: almost 3 pages (952D–955C). The reason for these differences in length is graphically illustrated in Table I, where we can see that water and earth are allowed, as fire is not, a whole series of considerations beyond the three main themes of discussion which they share. This fact on its own may already indicate Plutarch's bias against air, and the sheer superiority in the number of arguments marshalled against that element must contribute to an unfavourable impression of it in the minds of his readers—and that is before the force of their content is taken into account.

TABLE I. The main arguments of *de prim. frig.* 984D–955C

Air: 948D–949F	Water: 949F–952C	Earth: 952D–955C
1. Fire is warm and bright; so its opposite must be cold and dark; but air is dark as is shown by etymology and the poets; therefore air is τὸ πρώτως ψυχρόν.	1. (A) Bright and hot belong to the same substance, as cold and dark belong to the same substance. Perception shows us that water is principally dark. 1. (B) Heaviness and stability are more to be linked with cold than darkness. Water is heavier than air.	1. (A) Earth is principally dark and cold: the opposition of aether and earth argues for this. Aether is to Earth as light to heavy, as active to stable and as bright to dark. 1. (B) Heaviness, stability, and solidity are more to be associated with cold. Air has *no* part in these qualities; earth has *more* than water.
2. A thing is destroyed into its opposite: fire changes into smoke (= air). Cf. the vapours that come from the body of a hot person when cold water is poured on him.	2. A thing is destroyed *by* its opposite, though it does not necessarily *become* its opposite. Fire is changed into air *by water*.	2/3. Any force changes what it overcomes into something like itself: what is completely frozen represents the πρώτως ψυχρόν.
3. Freezing is a function of air and only a condition of water (which is naturally fluid and is only compacted through the agency of air).	3. Freezing is characteristic of water, never of air.	

Additional arguments

Against air	For water	For earth
Air lies near the aether: it must be similar in nature. (Nature keeps opposing elements apart with an intervening element: air is the buffer between aether and water). Air is everywhere: cold is not. Some parts of the world are cold and damp; others are hot and dry.	Wet objects often *feel* cold. Vessels break when they are full of water that freezes, not when they are empty. (Theophrastus makes this the action of the air: but it doesn't happen when the liquid is milk . . .)	Obvious to the senses that earth is naturally coldest: we retreat to more earth-bound places when it's hot. Earth is not sharp and mobile, but cuboid. Earth does not burn (and air actually shoots out fire of its own accord!). The earth near us has air and fire mixed in, which gives a false impression. Pebbles are put into drink to make it colder. The old philosophers distinguish the upper (fiery) and lower (earthy) realms. Dead bodies become cold as they turn back to earth.

It is important to note that none of the arguments presented in the section devoted to the Stoics' claim that air is the principle of cold survive unrefuted or, at least, unchallenged. This is important, because the same is not true of the arguments in favour of water and earth, as we shall see. Argument (1) in favour of air is based on an association made by the Stoics between coldness and darkness (something also attested for them at *de Stoic. rep.* chapter 43). But the Stoics here are made to argue for this position on the basis of little more than the witness of poets and the use of etymologies (948EF). The value of these witnesses as evidence in this case must be called into question when we find later that it is equally possible to appeal to the poets in support of the essential coldness of water (950EF). But in any case, Plutarch makes a point of showing that water can demonstrate a better claim to coldness on the basis of this association by a direct appeal to perception (950A: ἡ αἴσθησις ἐπιμαρτυρεῖ). Furthermore, the advocate of water can say that heaviness and stability are *more* to be associated with coldness than is darkness—and water is certainly heavier than air (950DE).

The Stoics fare no better with argument (2), their claim that for a thing to be destroyed is for it to be changed into its opposite. Since fire is changed into smoke, they say, smoke (i.e. air) must be opposite in its essential qualities to fire. Again, the advocate of water points out that this theory of destruction is itself debatable: there are other models available (950E–951B). The Stoics adduce an example to support their argument that fire is changed into air: when cold water is poured onto a hot body, they say, a visible vapour is produced. Now this is an example that is, rhetorically, very weak, since the only obviously cold factor in it is the water. But in any case, there is nothing in the example that could not equally be explained under the theory that an element is *destroyed by* its opposite (the position that the Empedocleans advocate), thus making water, not air, the opposite of fire.

In the case of argument (3) we find again that there are alternatives to the theory of freezing put forward in favour of air. (According to the Stoics, freezing is a function of air, even though it is a condition of water: 949B.) Furthermore, almost all of the illustrations used to support the Stoic theory of freezing (and it is under this heading that the vast majority of illustrations used by the Stoics come) are met by counter-examples in argument (3) of the section devoted to water. For example, the Stoics' first claim is that, when snow melts, it must first discharge air (949C), but the Empedocleans reply that, insofar as air is kept in, freezing is prevented, so that the unfrozen depths of a frozen river give off vapour (air) when the ice above it thaws (951BC), and it is the retention of air in winter that keeps an animal warm (ibid.). The Stoics say that small portions of water freeze faster because they are in contact with a relatively greater amount of air (949C), but the Empedocleans point out that freezing never takes place at all unless water is present (950B). Water drawn from a well and suspended in a porous jar is found to be colder than the water in the well, say the Stoics (949CD), but it is the movement which expels heat, as it also expels the cold, comes the retort (951C). Rivers only freeze where they are in contact with the air (so the Stoics: 949D); but the reply is that the deeper levels retain air which stops them freezing (951BC). There are only two of the Stoics' illustrations which do not seem to be directly countered—and even they are of a kind that prove nothing once the theory they were supposed to illustrate has itself been challenged. One of these illustrations is the fact that a man is cooler after a sweat: the Stoics say that this can be explained if his pores are opened to let in

air.[11] The other is the curious observation of Aristotle that leaden whetstones 'melt' in the winter: the Stoics claim that this must be due to the action of air (949C).

It might be objected that I have so far done no more than rehearse the arguments between air and water, and done nothing concrete to show what I want to show, that air emerges as by far the weaker contender of the two. After all, the fact that the arguments in favour of air are matched by counter-arguments in favour of water may just as well show that *water* is the weaker contender. The debate can be read either way, and that, after all, is the point of the sceptical method. Yet there are two factors which militate against this understanding of the debate. Water emerges as a more plausible candidate for the principle of cold, as I claim, not just because it meets all of the important points raised by air, but because it does much more than that as well. The arguments are not equally balanced, as they would have to be if suspension of judgement were to result for the simple reason that (as I have already pointed out) there are more arguments adduced in favour of water than would be needed simply to balance the arguments in favour of air. This, as we have seen, is indicated by Plutarch in the text itself. After the main arguments (1)–(3) in favour of water, which balance the three arguments around which the section of air is structured, a 'fresh start' is made and new considerations are brought into play, some of which constitute further attacks on the possibility of air's being the principle of cold, and some of which add arguments in favour of water. We are given much more than we need to make us merely *unsure* about the arguments adduced in favour of air.

Another factor in favour of the suggestion that water is a more plausible candidate for the principle of cold than air emerges when we bring in the arguments for earth. These, as we shall see, tend not to argue equally against air and water, but actually to *support* the arguments of water against air. The superiority of earth's claim over water to being the πρώτως ψυχρόν is asserted not, on the whole, by challenging the arguments for water, but simply by showing that earth is *colder*. In important cases this is done on the basis of the very arguments first moved in favour of water. So, for example, Plutarch accepts the assertion in argument (1B) of the section devoted to water that heaviness and solidity are more closely associated with cold than is darkness; but he draws from it the natural conclusion that earth is colder still. Something similar happens with another claim central to the arguments in favour of water. In argument (2) the Empedocleans assert (against the Stoics' theory that change occurs between opposites) that there is actually a *cycle* of change. Change can happen between earth and water, between water and air, and between air and fire. Schematically:

Earth ↔ Water ↔ Air ↔ Fire.

In other words, change happens, not between opposites, but between elements that show affinity to one another. On this basis (so the argument goes) air cannot have a better claim to being truly cold than water, because air is closer to (being) fire than is water. However, it is immediately apparent that this argument would tend to the conclusion that earth is the coldest thing of all, because earth is even further away from fire in this scheme than water. This observation is important, because the

[11] See 949E. It might be worth noting that the Stoics use the pores as a prime example of something whose existence cannot be perceived: their existence is deduced from the fact that sweat flows through the skin: S.E. *adv. math.* 8.306. This presumably leaves wide open to debate the Stoics' assertion that we are cool after a sweat because the pores are relaxed and the air flows in, for we can see neither the pores and their relaxed state nor the supposed influx of air.

argument is so central to the case for water that it is actually repeated, in the 'new' section at 951C–E. What is more, Plutarch is even able to appeal to the Stoic Chrysippus for support in his argument. So 952CD:

> For Chrysippus, thinking that the air is principally cold because it is also dark, merely mentioned those who affirm that water is at a greater distance from the aether than is air; and, wishing to make them some answer, he said, 'If so, we might even declare that earth is principally cold because it is at the greatest distance from the aether!'

Not to prolong my analysis of what can be easily seen in the text itself, Plutarch's arguments in support of earth have this remarkable characteristic. Although there are attacks on the possibility of air being principally cold, there is no attempt to claim that it is actually absurd to think that water might partake of coldness. Chrysippus is frequently criticized by name for his advocacy of air, but Empedocles is never criticized for his support of water. Indeed, it is a striking fact that in the one place where Empedocles *is* criticized by name (at 953EF), the criticism is nothing to do with his claim that water is principally cold, but rather concerns his assertion that mountains rest on a subterranean bed of fire. The argument seems to be that water is indeed cold, but that the evidence which shows that it is so also shows that earth is colder still. So, for example, if water is cold, mud is *colder* (954A); water can be used to cool a person down (cf. 949AB), but so can dust (954B); air, which is intrinsically warm, is cooled down *more* by the land than it is by the sea, which is why people move to the sea to escape the cold.[12]

I shall mention one last argument advanced in support of earth which is worthy of attention. This comes at 954D:

> The element of earth is not sharp or mobile or slender or prickly or soft or ductile (*οὐ τμητικὸν οὐδὲ κινητικὸν οὐδὲ λεπτὸν οὐδ' ἔχον ὀξύτητας οὐδὲ μαλθακὸν οὐδ' εὐπερίχυτον*), but solid and compact like a cube (*ὡς ὁ κύβος*).

Plutarch uses this characterization of the constitution of earth to explain not just its coldness and its relation to freezing, but also its weight and its perfect resistance to being burnt. In short, this looks like exactly the sort of explanation we were looking for at the beginning of the *de prim. frig.*: a more fundamental physical explanation of *all* the qualities possessed by the element which constitutes the principle of cold at the phenomenal level. Plutarch does not mention the triangles here, but the passage is full of obvious references to *Timaeus* 55d–56b. In that passage, Plato also attributed to earth a cubic shape (*τὸ κυβικὸν εἶδος*), characterizing it as the most immobile element (*ἀκινητοτάτη*) and contrasting it with the other elements which are more or less like fire—mobile, sharp, and prickly (*εὐκινητότατον*, *τμητικώτατον*, and *ὀξύτατον*). Plutarch has asked us to accept something like Plato's theory of triangles: if we do that, and there have been no arguments to suggest that we should not, then we are all but bound to accept this argument in favour of earth as the principle of cold.

My analysis of the arguments of the *de prim. frig.* does not pretend to be absolutely comprehensive. There would be little merit in extending the discussion simply in order to make it so, for it is abundantly clear already that Plutarch does not present us with

[12] See 954BC. This is an interesting example, because it could easily, perhaps more easily, have been used by Plutarch to show that water is actually warm. So it is striking that he does not attribute the relative warmth of the seaside to the sea *water*, but rather to the sea *air*. The point Plutarch actually seems to want to make is that air, which is naturally warm, is just not cooled down *so much* by the sea as it is by the land.

a straightforward three-way διαφωνία which is supposed to lead us to a suspension of judgement. On the contrary, he has so set things up that it is hard to resist the conclusion that plausibility in this matter is on the side of earth: earth is (in all probability) the πρώτως ψυχρόν, water partakes in a subordinate degree of coldness, and air actually lines up with fire as partaking rather in heat than coldness. It is impossible to believe after all of this that Plutarch still thinks that the matter is 'unclear', and it seems that the closing remarks of the *de prim. frig.* in 955C are not an exhortation to ἐποχή after all, but are rather a direct challenge to anyone who is still not convinced, putting the onus on them to show that absolute doubt can be reasonably upheld.[13]

Finally, it is worth noting that the positive conclusion which the arguments of the *de prim. frig.* lead us to is not only the conclusion that we find in Plato, supported and explained from first principles by his theory of fundamental triangles (see again *Timaeus* 54b5–56c7 and 61d5–62a5), but is also the consensus among Platonists of Plutarch's time and later. Atticus, for example, arguing against the five-element theory of the Peripatos, says that every body must be warm or cold, dry or moist, soft or hard, light or heavy, rarefied or dense. He goes on to say that nothing beside the four recognized elements can partake in these qualities (so that the quintessence, if it existed, would be quite without quality) and, in the course of this exposition, he connects air with heat, and earth and water with cold. 'For if a thing is warm', he says, 'it is [because of] air or fire; if it is cold, it is [because of] earth or water' (εἰ μὲν γὰρ θερμόν, ἢ πῦρ ἢ ἀήρ· εἰ δὲ ψυχρόν, ὕδωρ ἢ γῆ: fr. 5, esp. 22–4 [des Places]). See also Macrobius, who, appealing to the *Timaeus* in describing the various affinities between the elements, says in particular that earth and water are united by their coldness, air and fire by their heat (*in Somnium Scipionis* 1.6.24–7; cf. esp. 26: *terra et sicca et frigida, aqua vero frigida et umecta est . . . aer umectus et calidus est*).[14]

It does, perhaps, remain to ask why it is that Plutarch is as circumspect as he is in all of this: if he means us to believe that earth is principally cold, why does he set up the *de prim. frig.* as if it might lead us to suspend judgement altogether? The simple answer to this is that Plutarch *is* a sceptic: a 'positive' sceptic (a 'probabilist', as I characterized him earlier), but a sceptic nonetheless. On the whole, Plutarch does not want to put across his teaching by his αὐτὸς ἔφα: he thinks that we should arrive at the conclusion ourselves by an objective consideration of the evidence. What is more, the conclusion we arrive at will never be *more* than plausible: as we have seen, true knowledge of the sublunary world in impossible. It is, in the end, for us to decide whether the evidence has that plausibility which Plutarch himself thinks that it has.[15]

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[13] If it should be objected that Plutarch's search for an answer that '*greatly* exceeds in plausibility' (τῇ πιθανότητι ὑπερέχειν πολύ: cf. 955C) seems intended for a requirement that he expects not to be met, we should compare *quaest conviv.* 700B. There we find another controversial Platonic theory (the thesis that drink passes through the lungs) described precisely as being 'by far the most likely solution' to the discussion: εἰκότα γὰρ μακρῷ.

[14] That neither of these passages brings out the fact that earth is *colder* than water (as fire is *warmer* than air), which is part of the Platonic schema, and part of the conclusion of the *de prim. frig.*, is to be explained by the contexts from which they are taken. For neither Atticus nor Macrobius are making points which require this level of detail, whereas the question is, of course, central to Plutarch's investigation.

[15] I have argued elsewhere (cf. note 1 above) that Plutarch does something very similar in the *de Stoicorum repugnantiis*: this work too is set up on a sceptical model, but the evidence it presents apparently inclines to support the positive philosophy—the Platonism—held by Plutarch himself.