

On the Physical Aspect of Heraclitus' Psychology¹

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Abstract

The paper first discusses the metaphysical framework that allows the soul's integration into the physical world. A close examination of B36, supported by the comparative evidence of some other early theories of the soul, suggests that the word *psuchê* could function as both a mass term and a count noun for Heraclitus. There is a stuff in the world, alongside other physical elements, that manifests mental functions. Humans, and possibly other beings, show mental functions in so far as they have a portion of that stuff. Turning to the physical characterization of the soul, the paper argues that B36 is entirely consistent with the ancient testimonies that say that *psuchê* for Heraclitus is exhalation. But exhalations cover all states of matter from the lowest moist part of atmospheric air to the fire of celestial bodies. If so, *psuchê* for Heraclitus is both air and fire. The fact that *psuchê* can manifest the whole range of physical properties along the dry-wet axis guarantees that souls can show different intellectual and ethical properties as well. Moreover, Sextus Empiricus, supported by some other sources, provides us with an answer how portions of soul stuff are individuated into individual souls. The paper closes with a brief discussion of the question whether, and if so with what qualifications, we can apply the term 'physicalism' to Presocratic theories of the soul.

Keywords

Heraclitus, psychology, soul, mind, cosmology

¹) This paper has grown out of ideas I first presented at the Symposium Philosophiae Antiquae Quintum organised by Apostolos Pierris and then at the Jubilee meeting of the Southern Association of Ancient Philosophy in Oxford. A modified version of the original paper will be published in the proceedings of the Symposium Philosophiae Antiquae

The most significant and possibly most far-reaching novelty of Heraclitus' conception of the soul is a considerable extension of the $\psi\upsilon\chi\acute{\eta}$'s role. As commentators have emphasized, in Heraclitus' aphoristic utterances the $\psi\upsilon\chi\acute{\eta}$ emerges for the first time as an integrated centre of motor, cognitive and emotive functions.² Heraclitus thus has a major role in the process through which the word $\psi\upsilon\chi\acute{\eta}$ acquires the broad but fairly unified sense it has in the texts of the Classical and later periods. This novel characterization of the soul, moreover, is an integral part of what appears to be the general thrust of Heraclitus' entire philosophical project: a shift from an impersonal, objectivist description of the physical world, as practiced by his Milesian predecessors, to an approach in which questions about the nature of things in the world on the one hand, and reflections on the human being who is striving to understand the nature of things, and seeks to communicate his findings to other human beings, on the other hand, are intimately linked. In such a complex, epistemologically oriented and reflexive approach the centre of cognition will naturally acquire a place of prominence; and Heraclitus takes $\psi\upsilon\chi\acute{\eta}$ to be the centre of cognition. The joint effect of these developments resulted in a new, and in a sense strikingly modern, conception of the self that has sometimes been compared to Thomas Nagel's 'objective self'.³

If this is the most momentous feature of Heraclitus' philosophical psychology, why should we bother too much with the seemingly less exciting physical aspect of his conception of $\psi\upsilon\chi\acute{\eta}$? The answer, I maintain, is that Heraclitus seems to hold at the same time that self-reflection and introspection, although important, are not sufficient to gain knowledge about

Quintum. At the Symposium, Aryah Finkelberg read a paper (Finkelberg (forthcoming)) that overlaps with my discussion at some points, although his main interest is in Heraclitean eschatology. The greatest bulk of the present paper is new and the rest has been substantially rewritten. I am grateful for the audiences in Ephesos and Oxford. Comments by David Charles, Christopher Gill, Katalin Farkas, Aryah Finkelberg, Charles Kahn, Tony Long, Stephen Menn, Malcolm Schofield, and David Sedley were particularly helpful. I owe much to discussions with Roman Dilcher.

² See especially Nussbaum (1972) and Schofield (1991).

³ See Long (1992) and Gill (2001). Because of all these considerations, it would probably be more appropriate to translate Heraclitus' $\psi\upsilon\chi\acute{\eta}$ as 'mind'. I continue to render it as 'soul' for reasons of convention.

the soul. The soul is integrated into the physical world, and reflections about the physical world can lead us to some crucial insights about the nature and working of the soul. Understanding the soul is the key to understanding human nature and the world, and the interrelation of the two; but, on the other hand, understanding the cosmic order and the major physical processes is vital to gaining knowledge about the soul.⁴ Heraclitus thus appears to agree with the implication of Socrates' rhetorical question in the *Phaedrus*: 'Do you think it is possible to understand the nature of the soul in a worthwhile manner without understanding the nature of the whole?'⁵ (*Phdr.* 270c1-2). The soul is part of the whole, and cannot be properly understood without having a grasp on the way it is integrated in the physical world.

In what follows, I shall approach Heraclitus' views on the ψυχή from the side of its physical and metaphysical aspects. I shall concentrate first on the metaphysical framework which allows the soul's integration into the physical world and creates the conceptual space for its physical identification. Second, I shall turn to the physical characterization of the soul and to the way it is integrated into physical processes. In this part, I shall try to tackle the vexed question whether the soul for Heraclitus is fire or air, say something about the philosophical advantages of the option taken by Heraclitus, and briefly discuss Sextus' report of Heraclitus' psychology.

⁴) The fact that these two aspects of Heraclitus' philosophy cannot be severed has rightly been emphasized by Dilcher (1995) 53-54, with footnote 1 containing a criticism of Kirk's attempt to insulate the 'cosmic fragments'. Dilcher seems to start out by treating the cosmic aspect as secondary to the psychic (cf. e.g. p. 17), yet he eventually states that '[i]t is vital for the argument that man and cosmos illuminate each other's structure by this correspondence. Therefore, this double focus should not be imbalanced by giving priority to either side. (...) Both sides are equally essential.' (p. 93). I am in full agreement with these formulations, even though I disagree with specific parts of Dilcher's interpretation of Heraclitus' psychology, on which see below. See also the almost Heraclitean formulations in Long (1992) 271: 'In disclosing truths about nature, Heraclitus is disclosing himself, or rather, in disclosing himself he is disclosing truths about nature; he is discovering the knower in the knowable and the knowable in the knower.'

⁵) ψυχῆς οὖν φύσιν ἀξίως λόγου κατανοῆσαι οἶε δυνατόν εἶναι ἄνευ τῆς τοῦ ὅλου φύσεως;

Finally, I should add a methodological point. It has sometimes been urged that because of Heraclitus' mode of expression, the intentional obscurity of his pronouncements, and his apparent refusal to expound his views in continuous, argumentative prose, the interpreter ought not try to impute a clear-cut doctrine or theory to him. I would certainly agree that the interpreter has to show the utmost sensitivity to the formal, literary and linguistic features of the Heraclitean fragments. Yet I would still not renounce the idea that Heraclitus by his pronouncements expressed a set of fairly worked out and specific views about the topics he dealt with. The celebrated B93 states that 'The lord whose oracle is the one in Delphi neither declares nor conceals, but gives signals' and this statement has customarily been taken to describe Heraclitus' own mode of expression as well. But the implication of the apophthegm is neither that Apollo does not have a clear and specific view on the matter at hand, nor that the recipient should renounce discovering what the lord of the oracle thinks about the matter – even if one cannot hope to arrive at a definitive answer and dissipate all ambiguity.

1

B36 is the central fragment for locating the soul's place in physical processes:

For souls it is to die to become water,
 for water it is to die to become earth,
 from earth water is being born,
 from water soul.

ψυχῆσιν θάνατος ὕδωρ γενέσθαι,
 ὕδατι δὲ θάνατος γῆν γενέσθαι,
 ἐκ γῆς δὲ ὕδωρ γίνεται,
 ἐξ ὕδατος δὲ ψυχή.

The first remarkable point about this fragment is that soul appears here together with two main elemental masses, water and earth, in such a way that soul seems to be treated on a par with the two physical stuffs. This observation may appear obvious, but will receive some refinement later. The statement links the three terms, soul, water, and earth, by specifying the way they transform into each other so that the series of changes creates a cycle. That the focus is on the changes, and not merely on the states, becomes especially evident when we realize that the word *θάνατος* refers not to the state of being dead, but to the event of dying. Apart from phil-

ological considerations,⁶ this rendering is strongly recommended in this case by the fact that Heraclitus explains θάνατος by the verb γενέσθαι. I try to indicate this fact by translating θάνατος by the infinitive 'to die', instead of the more usual noun 'death'. The translation 'is being born' in the latter part of the fragment tries to capture the continuous aspect of the present indicative γίνεται and the contrast with the aorist of γενέσθαι.

The use of the terms 'to die' and 'is being born' to describe the transformations between soul and water and water and earth is doubly provocative. First, it is challenging to apply these terms to stuffs like water and earth that are usually considered lifeless. Second, it is possibly even more intriguing to speak about the 'dying' and 'birth' of the soul. Surely, the ψυχή has strong connections to life in the traditional, Homeric, conception – so much so that it is customarily called in the literature 'the organ of life'. Yet in the traditional conception it is not the ψυχή that does the living, but the organism is thought to live as long as the ψυχή is present and active in it. Correspondingly, it is the organism, not the ψυχή, that dies when the ψυχή departs from it.⁷ Similarly, it is highly unusual to speak about the birth of the ψυχή as such, distinct from the organism it is part of – just as we would not normally speak about the birth of either the mind or the brain as such.⁸

The interpreter can respond to these challenges by depleting the significance of the words 'dying' and 'being born' to arrive at the innocuous meanings 'cease to exist' and 'come into being'. The more interesting alternative, however, is to accept that Heraclitus attaches (some form of) life

⁶ Hussey (1991) 518-519 gives a very helpful concise review of the Homeric and Hesiodic occurrences of the word θάνατος. By this overview Hussey seeks to show, to my mind successfully, that θάνατος standardly refers not to a state but to a process or event, and should hence be translated by 'dying' rather than 'death'. Hussey does not discuss B36, which he thinks originally consisted only of the four words ψυχήσι θάνατος ὑγρῆσι γενέσθαι (529, n. 18), which he translates as 'It is death to souls to become moist'.

⁷ This has been excellently brought out by Nussbaum (1972). For the same point in Plato, see Karfik (2004). For further elaboration on this point, see Betegh (forthcoming).

⁸ For further discussion of this point, see Betegh (forthcoming).

to stuffs that are not usually conceived as living. When this latter option is taken, it becomes significant that the formulation of the cycle is not symmetrical. Describing the way down, from ψυχή to water, from water to earth, Heraclitus speaks about 'dying' into the next phase of the process, whereas on the way up, from earth to water, from water to ψυχή, he does not mention dying, only becoming or birth (γίνεται). When, on the way down, souls transform into water, the souls die and this is how water comes into being (or is born). When, on the way up, water transforms into soul, soul comes into being and is born. By this transformation water ceases to be – but I doubt that Heraclitus would describe the same transformation as the *dying* of water; water dies only on the way down, when earth is born from it, but not on the way up, when it is transformed into soul. Dying characterizes the way down.⁹

Incidentally, if it is true that only things that live can die, ψυχή in Heraclitus ceases to be the bearer of life. For water is distinct from ψυχή, yet it has to have some form of life if it is to die when earth comes into being from it.

The wording of the fragment shows a further notable point. The first and last words of the sentence refer to soul. This is clearly an indication of the cyclical nature of the transformations captured in the fragment. There is a difference, however. In its first occurrence, the word is in the plural, whereas in the second it is in the singular. In the following analysis, I shall assume that this shift from plural to singular is significant;¹⁰ I base it on the conviction that Heraclitus uses language with utmost care and his formulations show a remarkably high level of consciousness. The shift from plural to singular shows, first of all, that when we get to the end of the sentence we have not as yet made the full circle of the cycle of transformations. To close the circle, we still need to get to the plural ψυχαί from the singular ψυχή. As we shall see, much hangs on the way we account for the

⁹ B36 has many variants and paraphrases, 14 listed in Marcovich (1967) *ad loc.* Among these there are only three that speaks about dying on the way up as well: Plut. *de E* 392C; M. A. 4.46.1; Max. Tyr. 41.4, all three listed by Diels under B76. I agree with those commentators like Marcovich (1967) *ad loc.*, Kahn (1979) *ad loc.* and Dilcher (1995) 67 n. 1, who take these to be (Stoicizing) paraphrases. Contra: Pradeau (2002) 284-285 and 296.

¹⁰ So also Finkelberg (forthcoming).

difference between the plural and the singular form, and how we conceive of the process that leads from the singular $\psi\upsilon\chi\acute{\eta}$ to the plural, individuated $\psi\upsilon\chi\alpha\acute{\iota}$. We may ask, for example, what type of process is the one that delivers plural $\psi\upsilon\chi\alpha\acute{\iota}$ from the singular $\psi\upsilon\chi\acute{\eta}$? Does it already involve a measure of 'dying' as the processes on the way down? Or is it primarily an event of 'birth' as is characteristic for the processes of the way up? Or is it a completely different type of process?

Moreover, this difference between singular and plural calls attention to a semantic feature that may have important metaphysical bearings. The terms 'water' and 'earth' refer in the fragment to elemental masses, and correspondingly function as mass terms (or non-count nouns as linguists prefer to call them).¹¹ They do not refer to individuated things with definite borders but to stuffs. The plural of $\psi\upsilon\chi\alpha\acute{\iota}$ is all the more significant because it shows that Heraclitus here uses the term $\psi\upsilon\chi\acute{\eta}$ as a count noun – just as we would expect, because we are accustomed to think about souls as individuated entities. This means that we should qualify our preliminary contention that Heraclitus treats soul on a par with water and earth: not quite, because the word 'souls' refers to individuated things, whereas 'water' and 'earth' refer to stuffs. We can accordingly pinpoint a difference between the first two phases of the series of transformations. The first phase refers to the process through which souls conceived as individuated things lose their identities and cease to exist as they dissolve in an unindividuated stuff, water. The second phase in contrast refers to a process in which some part of water is transformed into another stuff, earth.

But what about the singular $\psi\upsilon\chi\acute{\eta}$ with which the fragment ends? I would maintain that at the end of the sentence $\psi\upsilon\chi\acute{\eta}$ is used as a mass term, much like water and earth, and not as a singular count noun standing for a class of things, souls. If it were not so, Heraclitus could have used the plural here as well. I assume, therefore, that what is described in the last colon of the sentence is not the way individuated souls are born from water but rather the way some part of water is transformed into another stuff, soul. The death of individual souls in the first colon of the fragment may or may not correspond to the death of individual human beings,

¹¹) Admittedly, 'count noun' and 'non-count noun' or 'mass term' are our categories. Yet these linguistic categories clearly apply to Greek as well (cf. Kühner and Gerth §348 on the use of *Stoffnamen*, and the way they can be used in the plural).

depending on whether Heraclitus believed in the post mortem survival of individual souls – a question on which I would suspend judgement.¹² The birth of soul in the last part of the fragment, in contrast, does not refer to the birth of individual human beings but to the way soul stuff is generated.¹³ The missing link in the cycle, the shift from the singular ψυχή to the plural ψυχαί, is the way we get individuated souls from soul stuff.

The idea of using ‘soul’ or ‘mind’ as mass terms, and the corresponding idea of conceiving soul or mind as stuffs, is quite alien for us. Yet it was not so in archaic and later philosophical texts. As I cannot provide a detailed survey of the relevant texts within the limits of the present paper, let me only mention some notable examples. Anaxagoras clearly uses the word νοῦς as a mass term when he says in B12 ‘mind is all alike, both the larger and the smaller [of it]’ (νοῦς δὲ πᾶς ὁμοίος ἐστὶ καὶ ὁ μείζων καὶ ὁ ἐλάττων).¹⁴ Similarly, when Diogenes of Apollonia maintains in B4 that ‘human beings and the other animals live by means of the air as they breathe. And this is for them both soul and intelligence’ (ἄνθρωποι γὰρ καὶ τὰ ἄλλα ζῶα ἀναπνέοντα ζῶει τῷ ἀέρι. καὶ τοῦτο αὐτοῖς καὶ ψυχή

¹² For the most recent defence of the survival of individual souls, see Finkelberg (forthcoming).

¹³ The shift from the plural to the singular must pose a problem also for interpreters like Marcovich (1967) 362 and Dilcher (1995) 67-69 who take the fragment to refer exclusively to processes *within* human beings. If the fragment describes the ‘microcosmic cycle’ within the living human being, it is unclear to me why it speaks about the death of souls in the plural and then switches to soul in the singular. Dilcher thinks that the only alternative to the microcosmic interpretation is eschatological, one that ascribes Heraclitus the view that the soul first leaves the body, lingers around for a while and then dies into water. It may well be that the first phase of transformation, from souls to water, happens within the human being, but that does not oblige us to say that all the transformations described in the fragment occur within the ‘microcosmos’: the fragment speaks about these transformations in general terms. For a critique of Marcovich’s physiological interpretation, see Schofield (1991) 15-21. Kirk (1954) 341, followed by Marcovich (1967) 361, states that even if the main thrust of the fragment would suggest that ψυχή stands for cosmic fire, parallel to the other two cosmic masses, the plural of ψυχαί rules this out. I agree that to be the case at the beginning of the fragment, but nothing hinders that things change with the second, singular, occurrence of the word.

¹⁴ So also Menn (1995) 26: ‘We may begin by recalling the undeniable fact that Anaxagoras uses “*nous*” as a mass term.’ Menn argues that expressions like νοῦν ἔχειν are not

ἐστι καὶ νόησις) he treats air as a stuff that enters the body with breathing, but which, on the other hand, functions as soul and intelligence in us. It is more striking to see that Socrates, in both Xenophon and Plato, entertains a similar conception of soul and mind. In the *Memorabilia* Socrates tries to corner the irreligious Aristodemus by the following salvo of questions:

Do you think you have some intelligence (φρόνιμον),¹⁵ but there is nothing intelligent anywhere else at all? And this, when you know that you have in your body only a tiny measure of earth which is so huge, and a little bit of the large extension of waters, and that your body was constructed by receiving only a minute portion of all the other things which, surely, exist in great quantities? But as to mind (νοῦς), which is thus the only thing that does not exist anywhere else, you think you managed by some happy chance to snatch it, and you believe that those immensely great and infinitely many masses are in such a well-ordered state due to something lacking intelligence? (1.4.8)

Just as our bodies contain some measure of the stuffs earth and water, we also have a measure of mind in us. Much like Anaxagoras, Xenophon's Socrates treats 'mind' as a mass term that we can have a measure of. Plato's Socrates develops a strikingly similar argument in the *Philebus* to the effect that just as fire, earth and other material components of us come from, and are nourished by, the respective cosmic masses, so our soul comes from its cosmic counterpart.¹⁶ Finally, we can think of the *Timaeus* as well, where the imagery of soul stuff, its mixing, moulding, and portioning by the Demiurge is particularly conspicuous.

Greek for 'have a mind' but rather for something like 'have reason' or 'be reasonable', so that *nous* for Anaxagoras and other authors is reason (a mass term) and not mind (a count noun). My point is rather that Anaxagoras – just as some of his predecessors, contemporaries and successors – could use words like νοῦς and ψυχή as both count-nouns and mass terms. I shall continue to translate νοῦς as 'mind' even if the English word cannot capture this double usage.

¹⁵ My translation follows the text in Bandini and Dorion (2000) who, following Muretus, based on Bessarion's Latin version, delete the words ἐρώτα γοῦν καὶ ἀποκρινοῦμαι.

¹⁶ *Phlb.* 29a-30d, esp. 30a about the soul. The relationship between the arguments in the *Memorabilia* and the *Philebus*, and the possibility that they go back to the historical

The gist of what I have said about Anaxagoras, Diogenes of Apollonia and Socrates' argument in the *Memorabilia* may be present already in Anaximenes. The only relevant text is B2: 'Just as our soul, which is air, keeps us together, so do the breath and air encompass the whole world'; yet the wording, authenticity and interpretation of this fragment is too contested to draw any firm conclusions.¹⁷

From the point of view of terminology, these passages are largely incongruent as they speak about ψυχή, νοῦς, φρόνιμον, and νόησις. What connects them is the underlying metaphysical assumption according to which that which is the bearer of mental functions in us is a stuff that occurs also elsewhere in the world in smaller and larger quantities. Human beings show mental functions, and live, in so far as they have a share in that stuff. In this respect ψυχή and νοῦς are like other elemental constituents in us, and can be used as mass terms just like 'fire' or 'earth'. ψυχή and νοῦς at the same time function as count nouns in the same texts in referring to individuated portions of ψυχή and νοῦς stuff.

A possible corollary of this approach is that the stuff in question does not need to be in a human, or animal, body to show mental functions. More exactly, if a theorist wants to hold that this stuff shows mental functions only when it is in a human (or animal) body, he needs to provide specific reasons why this should be so.¹⁸ A further corollary is that the cosmic mass of soul (or mind) can be assigned cosmological roles because it can also be described as the greatest individuated portion of soul, or mind, stuff. Indeed, from this aspect the cosmic mass of this stuff can function as a cosmic divinity. The ambiguity between an elemental mass and a corresponding cosmic god is a familiar phenomenon that we can observe for example in the cases of Okeanus and Gaia, or water and earth.

Socrates, are interesting questions that cannot be discussed here. See D. Frede (1997) 215 n. 183 and Sedley (forthcoming).

¹⁷ The most detailed discussion of this fragment is in Alt (1973) who concludes that it has mistakenly been attributed to Anaximenes. For a much more optimistic view, see e.g. Laks (1999) esp. 252. Schofield (1991) 23-24 provides a balanced assessment of the fragment and compares it to Heraclitus' views on the soul. See also Betegh (forthcoming).

¹⁸ Aristotle makes this point explicit in *De An.* 1.5 411a8-23.

The characteristics of this cosmic god will be those that we assign to soul, or mind, in a human being: control, motor and cognitive functions and so forth.

It is time to come back to Heraclitus. By analyzing B36, I hope to have been able to make a case for the point that the fragment starts out by speaking about individual souls, but ends in speaking about soul conceived as a stuff. A very brief historical survey has shown that such a conception is fully in line with some representative theories of the archaic and classical periods. This constitutes the general metaphysical framework for the physical interpretation of the Heraclitean soul. B36 indicates that Heraclitus agrees with those who think that soul can transform into other stuffs, but apparently stands apart in describing that process in terms of 'dying'. The central questions that have emerged from the preceding discussion are the following: (Q1) *What is ψυχή in physical terms?* (Q2) *How can we conceive the shift from soul to souls?*

2

A number of fragments show that Heraclitus, in conformity with what the metaphysical framework allows, ascribes mental functions and characteristics not only to human beings, but to natural cosmic phenomena as well. If there is a stuff that intrinsically shows mental functions, it will show mental functions also when it is not in a human body. In B118 Heraclitus states that 'A gleam of light: dry soul, the wisest and the best' (ἀὐγή ξηρὴ ψυχή σοφωτάτη καὶ ἀρίστη).¹⁹ A natural phenomenon – that can be a beam of sunlight or a thunderbolt – is identified as soul, and described in superlative epistemological and ethical terms. When in B64 Heraclitus asserts that 'The thunderbolt steers these things, all of them' (τάδε πάντα οἰακίζει κεραυνός) he ascribes to the thunderbolt the governing, coordinating function that other fragments (e.g. B117) assign to the human soul. If we accept that the rhetorical question in B16 'How will one escape

¹⁹⁾ The philological arguments marshalled by Bollack and Wismann (1972) 325-327 show I think conclusively that the subject of the sentence is ἀὐγή and the predicate is ψυχή, qualified by the adjective ξηρή.

the notice of that which never sets?' (τὸ μὴ δύνόν ποτε πῶς ἄν τις λάθοι;) refers to cosmic fire,²⁰ we can see that Heraclitus also ascribes (some form of) cognition to the cosmic mass of fire.

What is common in these fragments is that psychic functions are attributed to fire or fiery things in natural phenomena. But does this entail that ψυχή is simply to be identified with fire? The standard interpretation holds that this is so, whereas the alternative interpretation, championed in the most developed form by Charles Kahn, maintains in contrast that ψυχή is, or is primarily, air.²¹ Note that this interpretative choice has important bearings on my overall thesis about the metaphysical framework. For if it is true that the human soul is air, while the bearer of psychic functions on the cosmic side is fire, then it is a serious threat to my whole story about explaining mental functions in human beings by saying that we have a share of the stuff that has mental properties in general and also on the cosmic scale.

The question of the material identification of the soul, whether it is fire or air, is intimately bound up with the question whether or not Heraclitus' theory of elemental masses included air as a distinct stage in the cycle of transformations. We have seen that B36 mentions only three stages in the cycle: soul, water, and earth. Fragments such as B30 and B90, together with the entire doxographical tradition starting with Aristotle, make it certain that fire had a place of prominence in Heraclitus' teaching, and thus clearly secure the place of fire.²² To this we can also add B31A:

Turnings of fire:
first sea, of sea half earth,
the other half *prêstêr*.

πυρὸς τροπαὶ
πρῶτον θάλασσα, θαλάσσης δὲ τὸ μὲν ἥμισυ γῆ,
τὸ δὲ ἥμισυ πρηστήρ.

²⁰ Cf. e.g. Kahn (1979) 274-275.

²¹ See Kahn (1979) 238-240. Kahn's view has been accepted also by Robinson (1987) 104-105.

²² It is an interesting but rarely remarked fact that not all ancient sources agreed that fire is Heraclitus' principle. Cf. Cicero ND 3.35: *sed omnia vestri, Balbe, solent ad igneam vim referre, Heraclitum ut opinor sequentes, quem ipsum non omnes interpretantur uno modo*. Aenesidemus, for example, took air to be Heraclitus' principle. Cf. S.E. M. 10.233, with discussion in Polito (2004) 154-161.

This fragment, just as B36, speaks about the transformations linking cosmic masses and phenomena. The transformations in this case are not described as dying and being born, but referred to as the turnings (τροπαί) of fire. Moreover, accepting that *πρηστήρ*, notoriously difficult to translate, refers to some fiery atmospheric phenomenon,²³ we have yet again a cycle in which the first and last terms are closely related but are not quite identical. Earth is common to B31A and B36, whereas seawater in B31A refers to the cosmologically most prominent part of water mentioned in B36.

All these fragments seem to deliver a coherent image according to which the third element beside water and earth is fire. The word *ἄήρ* only occurs in the different variants listed under B76, of which I quote here only the version transmitted by Maximus Tyrius:²⁴

Fire lives the dying of earth,
and air lives the dying of fire;
water lives the dying of air,
and earth that of water.

ζῆ πῦρ τὸν γῆς θάνατον,
καὶ ἄήρ ζῆ τὸν πυρὸς θάνατον·
ὔδωρ ζῆ τὸν ἀέρος θάνατον,
γῆ τὸν ὕδατος.

This text, however, has customarily – and I think with good reasons – been described as a Stoicizing paraphrase of B36.²⁵ Shall we conclude, then, that air is missing from Heraclitus' system altogether? Against such a conclusion, some powerful arguments have been raised. To begin with, it is unclear how one could claim that water immediately turns into fire

²³ For arguments for this view, see e.g. Kirk (1954) 330-331.

²⁴ The word *ἄήρ* is missing from Marcovich's *Index verborum*. Other versions of B76 are in Plut. *De E* 392 C and M. A. 4.46

²⁵ So also Kahn (1979) 153. Note that different versions of B76 are much less carefully formulated than B36. They do not indicate the cycle by ending the fragment with (a version of) the first word as B36 does and do not indicate the chain of transformations by always repeating the outcome of the previous process which becomes the starting point of the next phase of transformation. Instead, Marcus Aurelius adds the words *καὶ ἔμπαλι* at the end of the fragment. Remarkably, Plutarch's version has only three terms, fire, air and water, as he omits earth. Note also, that if the version of Maximus Tyrius, or that of Marcus Aurelius, is genuine, it invalidates the observations I have made above about 'dying' being characteristic of the way down. This is however not true of Plutarch's version, which preserves this aspect of B36.

in B36.²⁶ Moreover, I think Charles Kahn is simply right in insisting that Heraclitus ‘cannot have offered a theory of the natural world in which the atmosphere was omitted.’²⁷ And this is especially so, I would add, for someone writing after Anaximenes, who made air his principle, and Xenophanes, who was pre-eminently interested in various atmospheric phenomena and clouds. Simply ignoring what he does not agree with is, I think, wholly uncharacteristic of Heraclitus. It remains true, on the other hand, that the relevant fragments consistently list only three stages in the cycle, and I do not think that adherents of the four element interpretation of Heraclitus have been able to address this question in a satisfactory way. The ideal solution should be able to account for the fact that Heraclitus prefers to speak about three terms in the processes of transformation without, however, excluding atmospheric air. But how could that be done if the places of fire, water, and earth have already been secured?

When we come to the more specific question whether the human soul is air or fire, *prima facie* it seems more probable that it is to be identified with fire. First of all, we have just seen that fiery phenomena, such as a gleam of light and the thunderbolt, have psychic functions. There is also the force of analogy with other ancient theories. In all other early, and not so early, theories, when there is a primary form of matter, the ψυχή, or the bearer of the most important psychic faculties, is identified with that form of matter.²⁸ This interpretation can also align some ancient doxographical reports on its side.²⁹

²⁶ One might refer to instances when a liquid, such as the oil in a lantern, is burning, and this is how fire ‘is being born’ from something liquid. But then one should just as well refer to cases when something solid, earth-like, such as wood or coal, is burning.

²⁷ Kahn (1979) 140.

²⁸ Some further arguments of less force have also been adduced. Vlastos (1955) 364-365 for example referred to the observable fact that the living body is warm whereas the corpse is cold. This, however, is not based on any of the surviving texts of Heraclitus. KRS 204, on the other hand, state that while Anaximenes built on the Homeric view of the ψυχή being some kind of breath, ‘Heraclitus abandoned this idea in favour of another popular conception of the soul, that it was made of fiery aither’. I was unable to find any clear evidence for such an assumedly popular conception prior to Heraclitus.

²⁹ Theodoret., *Gr. aff. cur.* 5.18: Παρμενίδης δὲ καὶ Ἴππασος καὶ Ἡράκλειτος πυρώδη ταύτην (sc. τὴν ψυχὴν) κεκλήκασιν.

Yet, once again, the alternative view can refer to some ancient interpretations, including that of Philo of Alexandria.³⁰ Just as important, it can also present some powerful internal arguments supporting the view that soul is air and not fire. First of all, there are fragments in which we hear about wet souls, such as the soul of the drunken man in B117:

A man when he is drunk
is led by a beardless boy, staggering,
not knowing where he steps,
having his soul wet.

άνηρ όκόταν μεθυσθῆ,
άγεται ύπό παιδός σφαλλόμενος,
ούκ έπαίων όκη βαίνει,
ύγρήν τήν ψυχήν έχων

The controlling, motor functions of the drunken man's soul are severely impaired because his soul is wet. The question naturally arises how could Heraclitus maintain both that the ψυχή is fire and that it can get wet? Answering this objection by claiming that in such cases part of the soul dies, does not quite convince.³¹ For B117 speaks not about someone who has a reduced size fiery ψυχή, because part of his soul has died, but someone who has a wet ψυχή. Replace ψυχή with its assumed physical description, fire, and we are back to the absurd idea of wet fire. Consider also B77:

he says that for souls it is pleasure, not dying,
to become moist

ψυχῆσι (φάνασι) τέρψιν μη θάνατον
ύγρῆσι γενέσθαι

This fragment, preserved by Porphyry quoting Numenius, has often been considered spurious or corrupt. Marcovich, for example, treated it only as a reaction to B36. Many others have retained it, but offered various emendations. So some have bracketed μη θάνατον as an interpolated gloss.³² Another option, offered by Diels and followed by numerous scholars, is

³⁰ Philo, *De Aet. Mundi* 21 quotes the first part of B36 and then states that: ψυχήν γάρ οϊόμενος εϊναι τὸ πνεῦμα, τήν μὲν ἀέρος τελευτήν γένεσιν ὕδατος κτλ. Aenesidemus also thought that the soul is air for Heraclitus. On this point, see below.

³¹ See Schofield (1991) 29: 'When the soul becomes moist or wet its fire is put out – it dies (fr. 36) either entirely or in part, as in drunkenness, fr. 117, or in sleep, fr. 26. On the interpretation of ψυχή as fire Heraclitus does not need to be seen as committed to the absurd concept of wet fire.'

³² So, e.g., Gigon (1935) 106.

to emend the transmitted $\mu\eta$ into η , with the result that becoming wet is pleasure *or* death for souls. The motivation for emending this otherwise well-transmitted and intelligible text is clear: editors and interpreters have tried to harmonize B77 with B36 on the assumption that becoming wet is death for souls. But as Jaap Mansfeld has pointed out in his defence of the transmitted wording of B77, $\acute{\upsilon}\gamma\rho\eta\sigma\iota$ γενέσθαι, ‘becoming wet’, is not the same as $\acute{\upsilon}\delta\omega\rho$ γενέσθαι, ‘becoming water’.³³ And the same point applies also to the drunken man’s soul in B117. When the soul becomes moist or wet, it approaches water without becoming water as yet; it approaches dying without dying as yet. So B77 in its transmitted form is perfectly compatible with both B36 and B117 – but only if soul is something that can become wet, which fire surely cannot do.

The discussion in this section adds two further questions to the list started at the end of the previous section: (Q3) *How can we find a place for air in a system that apparently counts with only three major cosmic masses?* and (Q4) *How could we account for the fact that some manifestations of $\psi\upsilon\chi\eta$ for Heraclitus are fiery whereas others are wet?*

3

When we contrast the terms of the modern discussion about the physical identification of the Heraclitean soul with the earliest and most detailed ancient testimonies, one point becomes striking. The earliest accounts do not identify the Heraclitean $\psi\upsilon\chi\eta$ with either air or fire, but say that soul, for Heraclitus, is exhalation ($\acute{\alpha}\nu\alpha\theta\upsilon\mu\acute{\iota}\alpha\sigma\iota\varsigma$).³⁴ And they do so even when one would really expect them to identify soul as one of the elements. This is a conspicuous feature of Aristotle’s account of the physical characterization of the Heraclitean soul in *De Anima* 1.2:

Diogenes, like some others, [held the soul to be] air because he believed it to be the most finely grained and the principle; this is the reason why the soul knows and moves, in so far as it is primary, and the other things are from this, it knows; in so far

³³) Mansfeld (1967) 9.

³⁴) Arist. *De An.* 1.2 405a24; Aet. 4.3.12.; Cleanth. *apud* Ar. Did. fr. 39.2 Diels = Heraclitus B12 DK.

as it is the most finely grained, it originates movement. Heraclitus says too that the principle is soul, since it is the exhalation from which the others are composed. (*De An.* 1.2 405a21-6)

Aristotle is entirely happy in this context to say that for Diogenes the soul is air, just as for Democritus spherical atoms, for Hippo water, for Empedocles the organ of cognition is a mixture of the four elements. He even says that for Heraclitus, just as for Diogenes, ψυχή is the principle – what he does not say is that it is fire, even though elsewhere (e.g. in *Metaphysics* 1.2 984a7 = Heraclitus A5 DK) he identifies Heraclitus' principle as fire. On the other hand, he does not say that soul for Heraclitus is air, even though it would have been quite an obvious move considering that he is just pointing out the strong parallels between Heraclitus and Diogenes on the question of the material identification of ψυχή. Aristotle could jolly well identify Heraclitus' soul with either air or fire in this context, but he did not do so. Instead, he said that soul for Heraclitus is exhalation.³⁵

At this point I need to discuss very briefly what Aristotle may have meant when he stated that soul for Heraclitus is exhalation. Exhalation is a central concept in ancient meteorology in general, but is particularly important in Aristotle's theory. Indeed, Aristotle explained most atmospheric and meteorological phenomena by taking exhalations to be the material cause of these phenomena.³⁶ Aristotle famously distinguished between two kinds of exhalation, dry and moist, both starting from the earth.³⁷ Dry exhalation arises from the earth heated by the sun and reaches up to the fiery sphere in the sky, situated between the sphere of air and that of aether. Moist exhalation, in contrast, arises from the water in and on the earth and, being heavier, rises only up to the sphere of air

³⁵ This feature of Aristotle's testimony has clearly caused some uneasiness for Kirk. After having quoted Aristotle, he continues by saying that 'This occurs in a context in which Aristotle is anxious to find a common term for soul and ἀρχή (...); by ἀνθυμίασις here he means a kind of fire, but has deliberately chosen a vague term for it' (Kirk (1954) 275). But why would Aristotle prefer to use a vague term in this context, where fire or air would clearly better suit his purposes?

³⁶ For the most recent comprehensive discussion, see Taub (2003) 88-92.

³⁷ There is a discussion in the literature whether both exhalations are hot, or the moist exhalation is cold, but this point does not need to concern us here.

(*Met.* 1.3). On this view, then, exhalations extend from the level immediately above the earth, through the layer of air, up to the uppermost fiery region which is contiguous with the divine aither. Moreover, different fiery phenomena in the sky, such as shooting stars, lightning, 'torches' (δαλοί), and 'goats' (αἴγες), are explained as ignition of dry exhalations.

Clearly, not all of Aristotle's own theory of exhalations can be ascribed to Heraclitus. To begin with, Aristotle's insistence that exhalations arise from earth is in obvious contrast with what we have seen in B36: if Heraclitus' ψυχή is indeed exhalation, this exhalation must arise from water and not from earth. B31A, quoted above, also implies that transformations to and from earth must go through a liquid state of matter, water or sea, and that the fiery atmospheric phenomenon of πρηστήρ again comes from water/sea and not earth.

A further complication comes from Diogenes Laertius' doxographical report in 9.9-11, going back to Theophrastus, according to which Heraclitus had not only a bright exhalation arising from the sea and nourishing the sun, but also a dark exhalation coming from the earth so that this dark exhalation produces the darkness of night and winter. But as Kirk (1954) 270-6 has, to my mind, convincingly shown, the ascription of an earthly exhalation to Heraclitus is the result of some confusion with the Aristotelian theory.³⁸ The main objection to Diogenes' report, I think, is the same as above: the fragments that speak about the transformations between elemental masses show that earth only transforms into water and then water transforms into further fiery atmospheric phenomena and ψυχή. Diogenes' testimony, on the other hand, contains an additional piece of information, not mentioned by Aristotle. Diogenes says that the celestial bodies are bowls (σκάφαι) in which some part of the exhalation coming from the sea is burning.³⁹ This doctrine corresponds to the idea

³⁸ We encounter a further level of confusion in Aëtius 2.17.4 = Heraclitus A11 DK who says that it is the exhalation coming from the earth that nourishes the stars, even though in 2.20.16 he says that the sun is nourished by the exhalation arising from the sea, and in 2.28.6 he says that both the sun and the stars are nourished by the bright exhalation coming from the sea. The idea that the stars are nourished by dark exhalations is also contradicted by D.L. 9.10. One may wonder whether this confusion comes from that part of the doxography that connects the dark exhalations with night.

³⁹ Kirk (1954) 269-279 and Kahn (1979) 291-293 come to opposite conclusions about the different elements of the Theophrastean doxography. For Kirk, the doctrine of

that exhalations extend from the mist lingering on the surface of waters to the fiery phenomena in the upper sky.

Retaining the core of Aristotle's testimony, but stripping off what is incompatible with what we find in Heraclitus' original fragments, we get that ψυχή for Heraclitus is the exhalation that rises from water and extends to the sky and the fire of the celestial bodies.⁴⁰ The first part of this conclusion is reinforced by the apparently independent information provided by Cleanthes, preserved by Arius Didymus, that, according to Heraclitus, 'souls, too, come out of moisture by exhalations' (καὶ ψυχὰὶ δὲ ἀπὸ τῶν ὑγρῶν ἀναθυμιῶνται Ar. Did. fr. 39.2 Diels = Heraclitus B12 DK), whereas the connection between ψυχή and stellar matter, is supported by the testimonies of Macrobius and Galen.⁴¹

If we accept that Aristotle, our earliest doxographical source on Heraclitus' psychology, was basically correct in saying that ψυχή is exhalation for Heraclitus, we get clear and coherent answers to three of the questions I have formulated above. Let us start with (Q1): *What is ψυχή in physical terms?* The ψυχή is all states of matter covered by exhalations from the lowest level of atmospheric air to the uppermost layer of celestial fire. This general answer in turn effortlessly offers solutions to the two puzzles raised at the end of section 2: (Q3) *How can we find a place for air in a system that apparently counts with only three major cosmic masses?* If we accept that ψυχή, one of the three terms of the cyclical transformation described in B36, covers the whole spectrum of matter covered by exhalation, then this term will include celestial fire, all kinds of fiery phenomena

celestial bowls is a secure piece of information, because 'this is such an unusual idea, so different from the sort of thing which would be invented by Theophrastus' (270), whereas in Kahn's view one must suspend judgement on the authenticity of the doctrine of σκάφαι. Kirk, on the other hand, tries to refute the double exhalations, whereas Kahn says that this is 'what seems most authentic in Theophrastus' report' (293). As should have become clear, on the assessment of this part of the doxography in D.L., I tend to side with Kirk.

⁴⁰) In a way, the line of interpretation I am taking is closest to the one proposed by Robert B. English in a paper published in 1913. English's paper, as far as I am aware, is completely ignored in more recent discussions.

⁴¹) Macr. *S. Scip.* 14.9 = Heraclitus A15 DK: (*animam*) *scintillam stellaris essentiae*. Galen 4.758.10 Kühn, not in DK. For the possible eschatological implications of this doctrine, see Finkelberg (forthcoming).

and atmospheric air. On the interpretation that follows Aristotle's testimony, it is correct both to say that Heraclitus distinguished three main cosmic masses and to accept that he did not ignore atmospheric air. Moreover, because the phenomenon of exhalation produces a gradual shift in the different physical properties of matter (from wet to dry, from cold to hot, from dark to bright), the entire cosmic region from the lowest part of atmospheric air to heavenly fire forms a continuum. That there is no such clear borderline between air and fire as there is between air and water or water and earth can receive some empirical justification. In the language of B36, it means that the continuum extending over the range of exhalation is not punctuated by 'death' and 'birth', whereas in the language of B31A, we can say that the gradual shift from fire to atmospheric air does not involve a 'turning'. Of course, a more refined analysis can distinguish a variety of different states of matter and phenomena within this spectrum: mist is not the same as the thunderbolt, a cloud is not $\pi\rho\eta\sigma\tau\acute{\eta}\rho$ or $\alpha\lambda\gamma\acute{\eta}$ and so forth.

Note also that it is not specific to $\psi\upsilon\chi\acute{\eta}$, understood as exhalation, that it designates one basic mass of matter within which different parts can be distinguished. The cosmic mass of water comprises brine, the fresh waters of springs, rivers and lakes, while the cosmic mass of earth can be analysed into sand, soil, rock and so forth. This point makes it easier to understand the apparent inconsistency between the terms of B36 and B31A. Earth is common to both, but in the case of the remaining two terms B36 speaks about the more general, comprehensive cosmic masses ($\psi\upsilon\chi\acute{\eta}$ and water), whereas B31A mentions only the cosmologically, or cosmogonically, more important parts of these masses (fire and sea).

The above answer to (Q3) immediately provides a solution to (Q4) as well: *How could we account for the fact that some manifestations of soul for Heraclitus are fiery whereas others are wet?* We have just seen that within the range of matter covered by exhalation, there are misty, foggy, wet parts, but drier, brighter and fierier parts as well. Indeed, it is the basic idea behind the concept of exhalation that it connects qualitatively different states of matter located in the atmosphere and the heavenly region. Note, again, that showing contrary properties is not particular to $\psi\upsilon\chi\acute{\eta}$. The mass of earth also covers a wide range of states that can manifest opposite physical properties from the dry, soft, bright and barren sand through the moist, dense, dark and fertile soil to dry and hard rocks.

Different forms of water also show contrary absolute and relational properties; just to mention one, salty seawater is lethal for human beings, but the fresh water of springs is healthy.

Incidentally, these considerations should remind us of the fact that the terms of the transformations described in B36 are not the elements as later philosophers in the wake of Empedocles conceived of them. Earth and water in B36 are not elementary forms of matter with a fixed set of properties,⁴² but large masses that comprise also contrary characteristics – and this applies to $\psi\upsilon\chi\eta$ as well.

The view that $\psi\upsilon\chi\eta$ encompasses a wide continuum of physical states offers considerable theoretical advantages for Heraclitus' philosophy. First of all, it is an unmistakable feature of Heraclitus' thought, that he, more than any other Presocratic, emphasizes the differences in the epistemological and moral states of people. On the one hand, his diatribe against the lamentable stupidity and wretched baseness of the many is a central element of his whole discourse. Fragments to this effect abound and there is no need to quote them here. Yet, on the other hand, Heraclitus clearly implies that this is not only what is available for humans, for people *would* have the possibility to improve themselves, and there are some, including of course Heraclitus himself, who have actually attained a much higher state in becoming wise and morally excellent. It remains true however that the perfection of the divine is beyond the limitations of the human condition.

Now, as we have seen, the soul is the centre of cognition and ethical behaviour. Moreover, we have also seen that the moral and intellectual properties of the soul are correlative to its physical properties, in particular whether it is wet or dry. Maintaining that the $\psi\upsilon\chi\eta$ can manifest opposite intellectual and moral properties *and* maintaining at the same time that these intellectual and moral properties are correlative to the relevant physical properties, entail that the soul stuff must be such that it can manifest opposite physical properties. The soul can be foolish and wise, virtuous and wretched, because it can be both dry and wet. So it is not the case that part of the soul dies when one debases oneself by being stupid, drinking too much, or being wicked, as the identification of $\psi\upsilon\chi\eta$ with fire

⁴²⁾ So also KRS 204, n. 1.

would require. The soul in becoming wet clearly approaches death, being on the way to water, but has not as yet died. Nor is it the case that the soul becomes something else, a different stuff, not-soul, when it reaches an excellent, divine state, as the identification of ψυχή with air would require.⁴³ The most fiery, and hence best state of the soul is reserved for the cosmic fire, and for the fire burning in the heavenly bowls. But these forms of fiery ψυχή show the same type of mental, intellectual, ethical properties as the more airy human ψυχή does – only on a much higher level. This connection was clearly seen by Galen when he writes:

For those who hold that the soul is the form of the body will be capable to maintain that it is not dryness, but the equality of mixture, that makes it more intelligent; in this they differ from those who hold that as much as the mixture becomes dryer, so much will also the soul become more intelligent. But should we not agree with Heraclitus' followers that dryness is the cause of intelligence? For also he himself said: 'A gleam of light (αὐγή): dry soul, the wisest',⁴⁴ again esteeming that dryness is the cause of intelligence. Indeed, one must hold this superior doctrine, considering the fact that the stars, which are luminous (αὐγοειδέις) and dry, possess the highest form of intelligence. (4.785-6 Kühn)

4

There is only one question from our list that has not as yet received an answer: (Q2) *How can we conceive the shift from soul to souls?* The gist of the answer, I would maintain, may come from a doxographical report by Sextus. The first part of the most elaborate ancient discussion of Heraclitus' psychology in *M.* 7.127-30 runs as follows:

(127) But what this [Heraclitus' common and divine reason] is must be explained concisely. It is a favourite tenet of our Physicist that that which surrounds us is rational and intelligent. (128) [Sextus lists poets who assumedly held the same doctrine

⁴³ So I cannot agree with Kahn (1979) 251 when he says that 'What he [sc. Heraclitus] probably meant, therefore, but what would be difficult to say (since *psychê* means 'life') is that the passage of the psychê into celestial fire might be both the death of psychê and at the same time its attainment of the highest form of life.'

⁴⁴ Galen omits the last word of the fragment (καὶ ἀρίστη) presumably because he concentrates on the cognitive capacities stemming from dryness.

before Heraclitus] (129) According to Heraclitus it is by drawing in this divine reason (λόγον) in respiration that we become endowed with mind (νοεροὶ γινόμεθα), and in sleep we become forgetful, but in waking we regain our senses. For in sleep the passages of perception are shut, and hence the mind (νοῦς) in us is separated from its natural unity with the surrounding medium; the only thing preserved is the connection through breathing, which is like a root. So when separated, our mind loses its former power of memory. (130) But when we awake it goes out again through the passages of perception as through so many windows, and by contact with the surrounding medium it regains its rational power. Just as coals that are brought near the fire undergo a change and are made incandescent, but die out when they are separated from it, just so does the portion of the surrounding medium which resides as a stranger in our bodies become nearly irrational (*alogos*) as a result of separation, but by the natural union through the multitude of passages it attains a condition which is like in kind to the whole. (trans. based on Polito and Kahn)

It has usually been maintained that this testimony contains practically nothing that we could attribute to Heraclitus. Kahn (1979) 293-6 discusses the text in an Appendix and concludes that the heavily Stoicizing interpretation preserved by Sextus is 'without any authority for the modern interpretation of Heraclitus' (p. 269). In the most recent extensive treatment of this passage, Roberto Polito,⁴⁵ on the other hand, lists powerful arguments, some of which go back to Diels, against the idea that the Heraclitus doxography in Sextus is of Stoic origin. Admitting that the idea of a cosmic Reason (*logos*) is indeed Stoic, he points out that there is no reason why a Stoic would interpret this cosmic Reason to be air or attribute such an idea to Heraclitus. Moreover, it is not a Stoic idea that we partake in the rational principle by breathing in the atmospheric air that surrounds us. Finally, the view that in sleep we are separated from Reason and our minds are inactive is un-Stoic, and indeed there is evidence that the Stoics had a different interpretation of the state of sleep in Heraclitus.⁴⁶ Polito then argues forcefully that the source of Sextus is Aenesidemus' interpretation of Heraclitus. Polito seeks to explain the admittedly Stoic elements in the text (such as divine Reason) by suggesting that Aenesidemus himself was working not on Heraclitus' book, but on an authoritative, systematic, word-by-word commentary on

⁴⁵ Polito (2004) 149-172.

⁴⁶ Calcidius, *Comm. in Plat. Tim.* ch. 251, p. 260 W.

Heraclitus, for which he thinks Cleanthes' exegesis of Heraclitus is the most plausible candidate.⁴⁷

Now what is it that we can still attribute to Heraclitus from this account? In particular, how shall we assess the role assigned to breathing? Is there anything Heraclitean in it? Although Polito provides a detailed analysis of the Hellenistic medical pedigree of the breathed-in-soul doctrine, and the reasons why Aenesidemus espoused it, he tentatively leaves open the possibility that it was present in Heraclitus as well. He, however, points out that it is somewhat problematic to square this with the idea that soul for Heraclitus is fire or fiery.⁴⁸ But this is not any longer a problem when we accept that everything from the lowest part of atmosphere to the heavenly fire counts as soul for Heraclitus. And we can know from Diogenes of Apollonia B4 and Aristotle that there were pre-Hellenistic versions of the idea of a breathed-in-soul.⁴⁹ The doctrine of breathed-in-soul, together with the idea that different layers of exhalation show different levels of intellectual powers in connection with the differences in the relevant physical properties, can explain the description of sleep in Sextus as well. Because in sleep we are only in connection with the lowest layers of air through breathing, our souls are only nourished by the least intelligent part of external soul stuff. It is sufficient to keep us alive, and to maintain our souls in a stand-by position, as it were. Note also that when the text says that through breathing we become νοεροί, it cannot mean that we become intelligent in the strong sense of the word. As the rest of the passage makes it clear, to become intelligent it is not enough to keep breathing. I thus agree with Polito (2004) 153 that the expression must mean something like 'breathing supplies us with psychic matter' or endowed with mind; in other words breathing is a necessary but not a sufficient condition for becoming intelligent. This may, by the way, apply also to Cleanthes' testimony preserved by Arius Didymus fr. 39.2 Diels = Heraclitus B12 DK, according to which αἱ ψυχὰι ἀναθυμιάμεναι νοεραὶ ἄεὶ γίνονται. The meaning cannot be that the souls continuously (ἀεὶ)

⁴⁷) Polito (2004) 167.

⁴⁸) Polito (2004) 146-148.

⁴⁹) Arist. *De An.* 1.5 411a17-21. The doctrine is attributed specifically to the Orphic writings in 410b27-30.

become intelligent. It is the prerogative only of some people to become truly intelligent, and breathing will clearly not suffice to attain that state. For a more intelligent functioning of the soul we need to be in contact through the senses with what surrounds us and what is permeated and physically transformed by the sun in daylight. It is only through perception, and primarily through sight, that we become in contact with the bright and the fiery.⁵⁰

The same passage in Sextus also tells us that the soul or mind in us is 'separated from its natural unity with the surrounding medium' and that it is a 'portion of the surrounding medium which resides as a stranger in our bodies'. This, I think, provides us an answer to the remaining question (Q2) *How can we conceive the shift from soul to souls?* The move from the singular soul to the plural souls occurs when part of the continuous but layered soul surrounding us and extending to the sky gets drawn in and trapped in our bodies through breathing. Moreover, the passage in Sextus also implies that this process can be conceived as a partial dying of the soul. This interpretation, as Aryeh Finkelberg, has recently shown, is confirmed by a passage in *PH* 3.230 where Sextus explicitly attributes to Heraclitus the view that 'our souls are dead and buried in us'. Philo who, as we have seen above, is one of those ancient interpreters who thought that the Heraclitean soul is airy, attributes a very similar view to Heraclitus. Philo in his interpretation of Heraclitus' B62 says that, according to Heraclitus 'when we live the soul is dead and buried in the body as a tomb' (*Leg. Alleg.* 1.108.2-5).⁵¹ According to this interpretation, then, the shift from the common, universal, singular soul to the particular, individual, private souls is already part of the way down and is characterized by dying. It seems to me that even if the wording and some details of Sextus' testimony in *M.* 7.127-30 show the traces of Stoic and Aenesidemean interpretation, the basic idea and the general thrust are entirely congenial to Heraclitus and are perfectly compatible with what I have tried to reconstruct from other sources.

⁵⁰ The exceedingly enigmatic B26 may support such an interpretation. Note also the use of *σβέννυνται*, central to B26, in Sextus' text.

⁵¹ Finkelberg (forthcoming). Finkelberg argues that the famous *sôma-sêma* doctrine in Plato's *Gorgias* 492d-493a is also Heraclitean.

5

Let me wrap up now with some methodological and terminological considerations on the question whether or not, and if so with what qualifications, we can use technical terms coming from contemporary philosophy of mind in our interpretation of the Presocratics in general and of Heraclitus in particular.

Although everyone seems to agree that the Presocratics thought that the bearer (or bearers) of mental functions are bodies of some sort that have physical properties, it has sometimes been questioned whether it is appropriate to describe the Presocratics, and Heraclitus in particular, as materialists or physicalists.⁵² Some commentators have maintained that it is not quite legitimate to apply these terms because the view that the bearers of mental functions are bodies showing physical properties remained uncontested all through the period. On this view, the dualist, i.e. Platonist, alternative has to be already on the table so that physicalism may emerge as an option consciously chosen and vindicated against a rival theoretical position.⁵³ I would certainly agree that the formulation of the dualist position had an important role in the theoretical elaboration of the physicalist position, but I do not think that the presence of dualism as a theoretically elaborated alternative is necessary for characterizing a view as physicalist. If that were the case, one could just as well claim that it is illegitimate to label ancient ethical theories eudaimonist, because the eudaimonist assumptions remained uncontested and there was no theoretically elaborated alternative on offer. Moreover, the appearance of the Platonic position in itself shows that dualism was an available conceptual possibility, and when Plato formulates his dualism, he formulates it in

⁵²) I use the somewhat awkward formulation 'bearer (or bearers) of mental functions' because different Presocratics use different words (such as *psychê*, *nous*, *noêsis*, and *phrên*) to describe this entity, and may distribute different psychic and cognitive functions among more than one of these. Materialism and physicalism is sometimes used interchangeably. For some authors, materialism is the broader term because it applies also to some pre-theoretical views (see below). Physicalism, by contrast, is broader in the sense that it accommodates forces etc. which are physical but not necessarily material.

⁵³) Cf. Barnes (1982) 475; Gill (2001) 170.

opposition to the philosophical views of his predecessors and contemporaries. All in all, I would stick to the idea that, quite simply, a conception or theory can legitimately be called physicalist if it satisfies our definition of physicalism. So the question is whether or not the views we can assign to the Presocratics, such as that the bearer of mental functions is a physical entity, satisfy our favoured definition of physicalism.

Another, connected, worry has been that only a sufficiently explicit, theoretically elaborated position can appropriately be described as physicalist, while the pronouncements of the Presocratics had not as yet reached that level of explicitness and theoretical elaboration. As to the first component of this objection, I would agree with Terence E. Horgan, who in his entry on 'physicalism' in Blackwell's *A Companion to the Philosophy of Mind* has emphasized the importance of distinguishing between '(i) certain vague, partially inchoate, pre-theoretic ideas and beliefs about the matter and hand; and (ii) certain more precise, more explicit, doctrines or theses that are taken to articulate or explicate those pre-theoretic ideas and beliefs'.⁵⁴ In making this distinction Horgan does not question that (i) can be called physicalist or materialist.⁵⁵ So even if the views of the Presocratics, and especially what is available to us from them, are certainly lacking in explicitness and theoretical elaboration, I do not think that anyone can deny that they satisfy at least (i).

Things get of course immensely more complicated once we try to be more specific, because, first, there is no non-contested general definition of physicalism and, second, on any account, the term covers a bewilderingly great variety of different theories and conceptions. It is thus desirable to specify, first, what we mean by physicalism in the case of the Presocratics in general and, second, more important, how to characterize the individual Presocratic texts in this respect.

Let me now try to specify what I take to be the most important difference between Presocratic and modern theories. The question that dominates modern discussions in philosophy of mind is whether or not, and if

⁵⁴) Horgan (1994) 471.

⁵⁵) With an avowedly arbitrary terminological decision, Horgan then reserves 'materialism' for (i) and uses 'physicalism' for (ii).

so how, mental functions and phenomena are related to anatomically recognized parts and physical constituents of our bodies. The ancient texts I have referred to approach this question from a different angle. They start from the assumption that there is a stuff in the world that is responsible for mental functions and life, and that we show mental functions and live because this stuff, along with other stuffs, is present in us.⁵⁶ The ancient authors then formulate alternative hypotheses what this stuff is and how it works in human beings and in the world at large. Some authors, e.g. Diogenes of Apollonia and probably Anaximenes, identify this stuff with an elemental mass, whereas other authors such as Anaxagoras and the Socrates of the *Memorabilia* and the *Philebus*, treat mind and soul as stuffs apart. A connected point of contention is whether or not the stuff responsible for vital and mental functions participates in the transformations among different stuffs. Diogenes of Apollonia and Anaximenes think that it does, whereas Anaxagoras, Socrates and Plato's Timaeus hold that it is insulated from transformations among other stuffs. The central question of the ancients is not how a physical stuff can under certain conditions show also mental properties, but rather they take it for granted that there is such a stuff, material or otherwise, and that it inheres in us as well.

Heraclitus, more specifically, has repeatedly been called an identity theorist.⁵⁷ As must have been clear from what I have said above, I also agree that, for Heraclitus, one's moral and intellectual condition is identical with the physical state of one's soul. But due caution, and some qualification, are in order here as well. Modern type-identity theorists are generally interested in the relationship between the mental properties of intentional states and sensations, such as having a certain thought or having a certain sensation, and the corresponding bodily states. Heraclitus, in contrast, seems to be much more concerned with more or less standing conditions or dispositions such as being wise, being morally excellent and so forth, which can be expressed on the dry-wet axis. He certainly treated

⁵⁶ As Tim Crane has reminded me, the closest modern analogy may be Henri Bergson's vitalism.

⁵⁷ So e.g. Kirk (1949) 392, followed by Kahn (1979) 249, quoted also by Schofield (1991) 15.

drunkenness in this context, but I wonder if he went any further and analyzed particular mental states, such as having a particular thought, desire or sensation in terms of the physical properties of the soul. It may be significant in this respect that Theophrastus has practically nothing to say about Heraclitus in his extensive discussion of Presocratic theories of perception.⁵⁸

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⁵⁸) The point about Theophrastus has been made by Laks (1999) 254. Theophrastus' only claim, i.e. that Heraclitus, together with Anaxagoras, thinks perception to be by contraries, seems to be a possibly unwarranted inference from the role of opposites in Heraclitus.

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