

Anaximander's 'Boundless Nature'

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Introduction

As Finkelberg¹ already said, one of the most obscure terms in Greek philosophy, ascribed to Anaximander, is τὸ ἄπειρον, which may be tentatively translated as 'the boundless' (or 'the infinite', or 'the non-finite'; some authors even simply transliterate 'the *apeiron*'). The generally accepted opinion is that Anaximander named his ἀρχή, the origin, source, or principle of everything, by the term τὸ ἄπειρον and that this is where philosophy really started. Already in ancient times authors complained that Anaximander did not explain what he meant with (the) boundless. According to Aëtius, Anaximander fails

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¹ Finkelberg (1993: 229).

(ἀμαρτάνει) by not saying what the boundless is (Aëtius, *De plac.* I 3 3, DK 12 A 14, TP 2 Ar 53, Gr Axr 18).² Simplicius notes that Porphyrius said that Anaximander called the underlying substance (τὸ ὑποκείμενον) in an indeterminate way (ἀδιορίστως) boundless, without making clear (οὐ διορίσαντα) its disposition (Simplicius, *In phys.* 9 149 11–27, TP 2 Ar 168, not in DK and Gr). Diogenes Laërtius also says that Anaximander did not define the boundless which he took as the principle (Diogenes Laërtius, *Vitae* II 1, DK 12 A 1, TP 2 Ar 92, Gr Axr 1.). And recently an author remarked that “his silence on this question creates an inevitable question for interpreters ancient and modern”.³ Numerous interpretations have been proposed to explain what Anaximander could have meant by using such a mysterious and ostensibly abstract term as an explanation for the existence of everything. The fascination of ‘the boundless’ hovers over the entire Anaximander-interpretation. As Kahn noticed: “most commentators, including Nietzsche and Diels, (...) were (...) fascinated by the concept of *das Unendliche* as the source of all that exists”.⁴ In the words of Havelock:

(...) the view shared by all modern historians of philosophy that an important philosophical advance was achieved, as early as the Milesians, by introducing a conceptual abstraction, in essence metaphysical, into the language of philosophy, and using it in a fundamental sense to explain material existence. That is to say, the term ‘the non-finite,’ identified as a term by the generic article in the neuter singular, a device uniquely Greek, was, it is supposed, offered as identifying a philosophical idea in its own right.⁵

A good example of what Kahn and Havelock mean is Jaspers, who, in the first volume of his *Die grossen Philosophen*, treats Anaximander as the first metaphysician and bestows him with a threefold power of abstraction: from immediate experience to imagination, from representation to its invisible essence (e.g. necessity, justice), and from there to that which is beyond any shape and beyond all opposites (the boundless).⁶ Another example is Seligman, whose book on Anaximander is dedicated to the *apeiron* as a metaphysical key idea, consisting in the basic polarity between the *apeiron* and existing things.⁷ More recently, Graham starts his study on the Ionian Tradition of Scientific Philosophy by stating that “According to Anaximander, the original state of affairs consisted of some ever-

² TP 2 = Wöhrle (2012); TP 1 = Wöhrle (2009); Gr = Graham (2010); DK = Diels/Kranz (1951/1952). Wöhrle’s excellent volumes will certainly become the standard for quoting the Milesians. In the translations, we follow mainly Graham (if available), with incidental modifications.

³ Graham (2010: 45).

⁴ Kahn (1994: 168).

⁵ Havelock (1983: 53).

⁶ Jaspers (1957: esp. 22).

⁷ Seligman (1962: passim).

lasting stuff, which he elsewhere calls 'the boundless'.⁸ Even more recently, Drozdek, in his study on infinity in Greek philosophy, concludes a chapter on Anaximander by stating that "The *Apeiron* is an infinite and eternal substance", which he compares with "the apophatic theology of Orthodoxy according to which the essence of God is not known and is unknowable".⁹ There has always remained, however, a skeptic minority about this kind of interpretation. The above-quoted Havelock is one of them.

In this article we will suggest a new approach to the interpretation of Anaximander's ἄπειρον. This approach is based on three observations: (1) It is well known that the question about the origin of everything has its roots in Aristotle's explication of ἀρχή as 'source', 'origin', 'principle', and 'cause'. Aristotle interpreted the explications of the origin of all things and the continuing nature of the present world given by his predecessors as the search for the ἀρχή. Consequently, in the doxography Anaximander's supposed concept of ἀρχή is generally understood through the Aristotelian paradigm of the principles and causes, and particularly in terms of the material cause. We may suppose, however, that in this process of Peripatetic interpretation the original concept has been more or less misunderstood. (2) As we will try to elucidate below, it is not so manifest as many authors believe, that Anaximander used the term τὸ ἄπειρον as a noun with the neuter article. Instead, there is some evidence that he used ἄπειρος (or ἀπεῖρων) as an adjective, which means that it was meant as a property of something else. (3) Generally speaking, it is not easy to understand what could be meant by 'the boundless', 'the infinite', 'the non-finite', or whatever you may call it, as the origin or principle of everything, even when you do not understand it as something more or less abstract or metaphysical, but as something quasi-concrete as in some modern interpretations. Kahn, for instance, suggests that "the Boundless is in fact what we call infinite space (...). But this space is not as yet thought of in the abstraction from the material which fills it", and Graham advocates its being conceived of as "spatially unlimited stuff".¹⁰ A similar idea is put forward by Guthrie: "(Anaximander) certainly regarded the *apeiron* as an enormous mass surrounding (...) the whole of the world".¹¹ Barnes expresses the most general interpretation of τὸ ἄπειρον as a mass of stuff, "distinct from any of the ordinary cosmic stuffs".¹² Others, however, have doubted whether Anaximander used the term in the spatial sense at all. They maintain that in connection with boundless generation, τὸ ἄπειρον is described as "an endless, inexhaustible reservoir or stock".¹³ All these interpretations have in common that it is hard

⁸ Graham (2006: 7).

⁹ Drozdek (2008: 12). In a note on the same page Drozdek recalls Burch (1949: 143), who saw in Anaximander (not Anaxagoras, as Drozdek accidentally writes) an anticipation of the negative theology of Dionysius (not Dionysus) the Areopagite.

¹⁰ Kahn (1994: 233); Graham (2006: 31).

¹¹ Guthrie (1985: 85).

¹² Barnes (1982: 36).

¹³ Jaeger (1947: 24).

to make a comprehensible image of this ‘unlimited stuff’ or ‘inexhaustible reservoir’ and how it is supposed to work upon the world of things.

Before offering our interpretation, we will first clear the field by discussing the etymology and meaning of ἄπειρος and by looking more carefully at the doxographical evidence. This will, we think, support our suggestion that Anaximander used the word ἄπειρος as an adjective, which will lead to the question of what ἄπειρος must be thought to be a predicate.

Etymology and meaning of ἄπειρος

Ἄπειρος has two meanings: (1) ‘infinite’, ‘without end’, and (2) ‘inexperienced’, ‘not acquainted with’. The second meaning has hardly ever been taken seriously in connection with Anaximander.¹⁴ In the first meaning, the words ἄπειρος and ἀπείρων were also associated with the description of nets, fetters or rings.¹⁵ Usually, the meaning ‘infinite’ is brought into relation with πέρασ, ‘end’, ‘limit’. Kahn suggests a connection with the verbal root *per*, as in πείρω, περάω, περαίνω. Then the meaning of ἄπειρος is not nominal, but verbal: “what cannot be passed over or traversed from end to end”.¹⁶ In this sense in Homer the vast extension of land and sea has the epithet ἀπείρων, the epic form of ἄπειρος. In the same sense Xenophanes of Colophon said that the earth reaches down ἐς ἄπειρον (DK 21 B 28, Gr Xns 52). Kirk c.s conclude that “we may legitimately doubt whether the concept of infinity was apprehended before questions of continuous extension and continuous divisibility were raised by Melissus and Zeno”.¹⁷ According to Graham, several studies have shown that ‘boundless’ never bears the meaning ‘indeterminate’.¹⁸

Recently, a completely different and at first sight rather strange etymology has been proposed by Giovanni Semerano. He derives ἄπειρος from the Semitic *apar*, the Hebrew *afar* and the Akkadian *eperu*, all meaning ‘earth’. What Anaximander should have meant, then, is something like “dust thou art, and unto dust shalt thou return”.¹⁹ In an oversimplified interpretation of the early Presocratics, this interpretation would close a gap in the list of elements as alleged principles: Thales – water, Anaximenes – air, Heraclitus – fire, and now Anaximander – earth. However, as far as we know this etymology has not been taken seriously as yet.

¹⁴ For an exception, see Tannery (1904).

¹⁵ Liddell and Scott (1996: s.v. ἄπειρος, ἀπείρων).

¹⁶ Kahn (1994: 232).

¹⁷ Kirk c.s. (2007: 110).

¹⁸ See Graham (2006: 30) referring to Gottschalk (1965: 51–52) and Dancy (1989: 151, 163 ff. and 170–2).

¹⁹ Semerano (2001: esp. 32). The quotation is from Genesis 3, 19.

Aristotle on Anaximander's 'boundless'

In *Metaphysics A*, Aristotle presents his predecessors and assigns to them their presumed principles. Surprisingly, Anaximander is not mentioned. Aristotle mentions him by name only on four occasions. One of these, in *On the Heavens*, is about the position of the earth in space and is not relevant for this article. The only text in which Aristotle directly seems to link Anaximander with τὸ ἄπειρον is in *Phys.* 203 b 3ff.

For a good understanding of this text we will look first at its context. In *Phys.* 202 b 30ff. Aristotle had stated that the students of nature (φύσις) must also investigate the boundless (θεωρησάμενοι περὶ <τοῦ> ἀπείρου) and that in fact they all did so. Then he distinguishes two groups. The first consists of the Pythagoreans and Plato, who:

regarded it as existing in itself, and not as being a condition incident to something, but having its own substantive existence (*Phys.* 203 a 4).

In other words, they treated the boundless as a subject and read it as a noun. The other group, referred to as "all the physicists" (οἱ δὲ περὶ φύσεως ἅπαντες), on the contrary,

make some other nature (...) a subject of which 'unlimited' is a predicate (ὅποτιθέασιν ἑτέραν τινὰ φύσιν τῷ ἀπείρῳ) (*Phys.* 203 a 16).

Wicksteed and Cornford comment: "whereas Plato and the Pythagoreans talked simply of 'the unlimited' in the abstract, the physicists have an unlimited *something*".²⁰ Fehling quotes this with consent, and adds: "Anaximander muß ja zu den genannten Autoren gehören".²¹ It is a pity that this crucial text is overlooked by Diels/Kranz, Wöhrle, and Graham. An obvious example of a 'physicist' that Aristotle is thinking of is Anaximenes, according to whom 'boundless' is a predicate of 'air', and his principle ἀήρ ἄπειρος. However, the same point is already underlined as evident in ancient commentaries, which mention Anaximander explicitly in this context. Alexander of Aphrodisias obviously refers to these lines in his commentary on Aristotle's *Metaphysics*:

He (sc. Aristotle) says that the others (sc. the physicists) made the boundless an attribute (συμβεβηκὸς ἔχον τὸ ἀπείρον) of some body (...) like Anaximander (Alexander, *In Metaph.* 1 47 19–24, TP 2 Ar 81, not in DK and Gr).²²

And Simplicius says in his commentary on Aristotle's *Physics*:

²⁰ Wicksteed and Cornford, Vol. I (1957: 220 footnote b).

²¹ Fehling (1994: 80).

²² Alexander, however, wrongly maintains that Anaximander took some intermediate nature as his principle (Alexander, *In Metaph.* 1 45 14–24, TP 2 Ar 80). See also Wöhrle (2012: 71 n. 2). Moreover, Alexander supposes

Of course they did not speak of the boundless as a substance, but as an attribute (εἰκότως οὐκέτι ὡς οὐσίαν ἀλλ' ὡς συμβεβηκὸς ἔλεγον τὸ ἄπειρον). Some of them (...) Anaximander (Simplicius, *In phys.* 9 458 19–26, TP 2 Ar 173, not in DK and Gr),

and again:

They made the boundless the attribute of something else (συμβεβηκὸς δὲ τινὶ τὸ ἄπειρον) (...) such as Anaximander (Simplicius, *In phys.* 9 452 30–453 1, TP 2 Ar 172, not in DK and Gr).

In recent times, with a few exceptions, Aristotle's above-quoted text has hardly been paid attention to. De Vogel concludes rightly: "Which means that according to Anaximander, being one of the *περὶ φύσεως ἅπαντες*, the *ἄπειρον* is not a subject, but a predicate".²³ More than twenty years later, the same conclusion is drawn by Lebedev from a study of the same text:

Aristotle says that of his predecessors only the Pythagoreans and Plato regarded the 'infinite' as a substance, while all the 'natural philosophers always' regarded it as an attribute of 'another substance'. In the language of grammar this means that only the Pythagoreans and Plato substantivised the adjective *ἄπειρος*, while 'all natural philosophers' used the term precisely as an adjective, modifying 'another substantive'.²⁴

One may wonder why so many other commentators have ignored Aristotle's quite definite statement and have treated Anaximander as if he belonged to the first group and spoke *in abstracto* of τὸ ἄπειρον.²⁵

Aristotle concludes:

The above makes it clear that a theoretic investigation [sc. of the boundless] was an appropriate one for physicists. It is logical for them all to posit it as a principle (*ἀρχή*) (Aristotle, *Phys.* 203 b 3–5, TP 2 Ar 2, not in DK and Gr).

that Anaximander's principle must be a kind of body (*σῶμα*).

²³ De Vogel (1957: 6–7).

²⁴ Lebedev I (1978: 53). The quotation is from the English Summary. Recently, Dührsen, in his article on Anaximander in the new and completely revised edition of Überweg's *Grundriss der Geschichte der Philosophie*, has inserted a section, called "Das Apeiron. Kritische Bedenken gegenüber der substantivierte Form" (2013: 271–273). His arguments are similar to ours. However, he does not draw the conclusion that there must be a subject of which *ἄπειρος* is the predicate, but takes τὸ ἄπειρον to be a doxographical interpretation of a qualitatively indifferent substratum and Anaximander a material monist after all (2013: 284–286).

²⁵ Conche suggests (1991: 91) in a rather complicated and not particularly convincing manner that Aristotle means all those who have a reasonable opinion on this issue, viz. with the exception of Anaximander. See also text at note 67 below.

The object of the investigation of the physicists, the boundless, is not mentioned in this line, but several lines earlier, in the above discussed text (*Phys.* 203 a 16), where it is said that they used the word attributively. And then follows the text in which Anaximander is mentioned:

Everything is either a source (ἀρχή) or derives from a source, but there is no source of the boundless, for then there would be a boundary of it. Furthermore, it would be without coming to be and perishing insofar as it is a source; for what comes to be must reach an end, and there is an end of every perishing. For that reason, as we say, there is no source of the infinite, but this seems to be a source of everything else and to contain all things and steer all things, as everyone claims who does not posit some cause beyond the boundless (παρὰ τὸ ἄπειρον), as for instance Mind or Love. And this is the divine (τὸ θεῖον), for it is deathless and imperishable, as Anaximander says, together with the majority of the natural philosophers (Aristotle, *Phys.* 203 b 6–16, TP 2 Ar 2, Gr Axr 16, DK 12 A 15).

A quite natural way to read this text is that Aristotle tries to formulate an argument why the members of the second group (including Anaximander) called their source or principle ἄπειρος, and then quotes as a kind of evidence some words from Anaximander: 'deathless', 'imperishable', and accordingly 'divine'. It would definitely be a mistake to deduce from this text that Anaximander called his principle τὸ ἄπειρον. When Aristotle speaks here of τὸ ἄπειρον, this must be understood as shorthand for "whatever they eventually adorn with the attribute 'boundless'". Actually, it is advisable in this kind of texts, wherever there is talk of τὸ ἄπειρον, to read "that what is called boundless". So we can appreciate when Irenaeus writes "Anaximander autem *hoc quod immensum est* omnium initium subiecit" (Irenaeus, *Adv. Haer.* 2 14 2, TP 2 Ar 52, not in DK and Gr, our italics). Wöhrle translates less precisely: "Anaximander hat als Anfang von allem das Unermeßliche gesetzt", instead of "das was unermeßlich ist".

Aristotle mentions Anaximander again when he distinguishes two types of explanation of change given by the physicists:

As the natural philosophers maintain, there are two ways [to account for change]. Some make the underlying body (σῶμα τὸ ὑποκείμενον) one, one of the three elements or something else which is denser than fire but finer than air, and they generate the other things by condensation and rarefaction so as to produce a plurality. (...) The others separate out the opposites from the one (ἐκ τοῦ ἑνός) in which they are present, as does Anaximander, and everyone who says there is a one and many, such as Empedocles and Anaxagoras. For from the mixture (τοῦ μείγματος) they too separate out everything else (Aristotle, *Phys.* 187 a 12–23, DK 12 A 9 and 12 A 16, TP 2 Ar 1, Gr Axr 13).

In this text Anaximander is related to the conception of separation of the opposites out of the one, but it is not quite clear whether the 'they' to whom 'mixture' is ascribed

includes also Anaximander, or only Empedocles and Anaxagoras, as the simplest reading would be. A similar text in the *Metaphysics*, however, has:

Anaxagoras' 'all things together' and the 'mixture' (τὸ μῖγμα) of Empedocles and Anaximander and the doctrine of Democritus would be better expressed as 'all things together potentially, but not actually' (Aristotle, *Metaph.* 1069 b 22, DK 59 A 61, TP 2 Ar 5, not in Gr).

In this case, 'mixture' seems to be ascribed directly not only to Empedocles but to Anaximander as well. Several attempts have been made to alter this text to make it better understandable, non of them convincing.²⁶ Our impression is that either Aristotle was mistaken and credited Anaximander abusively with the 'mixture' of others, or that the only way he could make sense of what he understood to be Anaximander's principle was by a term he borrowed from Anaxagoras and Empedocles. Moreover, as Conche says, such an original mixture would be at variance with a text in the doxography where it is said that the opposites (warm and cold) are generated by the γόνιμον, which itself was separated off from the everlasting (ἐκ τοῦ ἀιδίου) (Pseudo-Plutarch, *Strom.* 2, Fr. 179, DK 12 A 10, TP 2 Ar 101, cf. Ar 69, Gr Axr 19).

The confusions resulting from Aristotle's uneasiness with Anaximander's 'boundless'

Of course, Aristotle was not a historian of the philosophy of his predecessors. Nevertheless, his attempt to force Anaximander into his own philosophical system of the four causes has led to several confusions. His uneasiness has resulted in the complaints that Anaximander did not define his principle, as quoted at the start of this article. The text in which Aristotle seems to apply the term 'mixture' to Anaximander's principle has led to a rather uncritical repetition in the doxography. There is, however, no indication whatsoever that Anaximander taught something like Anaxagoras' 'all things together'. More serious is that a whole tradition of interpretation has been generated maintaining that Anaximander took as principle some undefined (ἀόριστος) element between (μεταξύ, μέσον τι) the others. Aristotle mentions such an alleged element between the others several times (Aristotle, *De gen. et corr.* 328 b 35, TP 2 Ar 11; 332a21, TP 2 Ar 12; *Metaph.* 988 a 30–31, 989 a 13; *Phys.* 189 b 3, 205 a 27; *De caelo* 303 b 11, TP 2 Ar 7, all not in DK and Gr). According to Kirk c.s., however, Aristotle "had arrived at the theoretical hypothesis of an intermediate as a by-product of his reflections on Anaximander", although Anaximander in fact held no such theory.²⁷ More specifically, Conche has argued that this

²⁶ Cf. Conche (1991: 95, n. 9).

²⁷ Kirk c.s. (2007: 112).

interpretation is based on a wrong reading of Aristotle's above quoted *Phys.* 187 a 12–23, in which it is explicitly excluded.²⁸

Sometimes Aristotle seems to be hesitating. In *De gen. et corr.* 328 b 35 (TP 2 Ar 11, not in DK and Gr), he mentions the in-between element and then he adds: “but still a single *separate* (χωριστόν) body” (our italics). In the same sense he indicates the mysterious alleged element between the others with an ambiguous term as ‘something beside them’ (ἄλλο τί παρὰ ταῦτα) (Aristotle, *De gen. et corr.* 332 a 21, TP 2 Ar 12, Gr Axr 11, not in DK; 329 a 9, TP 2 Ar 11, not in DK and Gr). In one text in the *Physics*, παρὰ unmistakably should not be translated as ‘beside’ (‘alongside’, ‘next to’)²⁹ but as ‘beyond’, or ‘separate’, identical with χωριστόν. In other words, one gets the impression that originally something completely different from, preceding and generating the elements, was meant, which Aristotle was not able to understand otherwise than as something corporal but not being one of the elements, e.g. when he attacks the idea of a boundless principle:

But it is not possible for the boundless body³⁰ to be one and simple – neither as some say as something *beyond the elements* (τὸ παρὰ τὰ στοιχεῖα)³¹ *from which they generate them* (...). For there are some who posit a boundless, not air or water. (...) But it is really *something else* (ἕτερον), they say, *from which these things arise* (Aristotle, *Phys.* 204 b 22–29, DK 12 A 16, TP 2 Ar 3, Gr Axr 17; our italics).

The argument in the next lines supports this interpretation: the boundless, if it were a fundamental constituent of the world on the same foot as the other constituents, would destroy the others, and therefore must be different from any of them. An argument for this reading can be found in *Phys.* 203 b 3–30, quoted earlier, where Aristotle argues that there can not be a source (ἀρχή) for that what is called boundless, because such a source would be *beyond* that what is called boundless (παρὰ τὸ ἄπειρον). In the same sense one may say that what is called boundless, being a source or principle itself, must be *beyond* that of which it is a source or principle.

Simplicius, too, in his commentary on Aristotle's *Physics*, sometimes identifies ‘beside the elements’ (παρὰ τὰ στοιχεῖα) with ‘between the elements’ (Simplicius, *In phys.*

²⁸ Conche (1991: 93–94). See also Simplicius *In phys.* 9 149 11–27, TP 2 Ar 168, not in DK and Gr.

²⁹ Here a problem of idiom (‘beside’ vs. ‘besides’) arises in the English translations: Graham sometimes renders παρὰ – in Axr 9 (Simplicius, *In phys.* 9 24 13–25) – as ‘besides’ (which means ‘in addition to’, ‘above and beyond’), where Kirk c.s. (2007: 113) have ‘beside’ (which means ‘next to’, ‘alongside’); and again ‘besides’ in Axr 17 (Aristotle, *Phys.* 204 b 23) where Wicksteed and Cornford have ‘in addition to’, and Kirk c.s. (2007: 113) ‘beside’. Another time – in Axr 11 (Aristotle, *De gen. et corr.* 332 a 18) he translates it as ‘beside’, where Forster has ‘other than’ and Kirk c.s. (2007: 111) ‘beside’. Finally, in Axr 16 (Aristotle, *Phys.* 203 b 13) he has ‘beyond’, where Wicksteed and Cornford have ‘alongside of’. A similar idiomatic difficulty comes about in German: Wöhler always translates παρὰ as the ambiguous ‘neben’.

³⁰ Cf. Conche (1991: 122): “Certes, nous ne dirions, quant à nous, que l'*apeiron* soit un ‘corps’, mais ceci est le langage d’Aristote”.

³¹ Conche (1991: 133) reads: “distinct des éléments”. Kirk c. s. (2007: 113) translates wrongly: “beside the elements” (see note 29 above).

9 149 11–27 TP 2 Ar 168, not in DK and Gr). Elsewhere, however, he obviously means “something beyond the elements, from which the elements generate” (Simplicius, *In phys.* 9 479 30–480 8, TP 2 Ar 176, not in DK and Gr). The most important texts are those which precede and follow his quotation of Anaximander’s fragment, and where what is first indicated rather vaguely as ἔτερος is finally called παρὰ, obviously meaning ‘beyond’:

And he says it is neither water nor any other of the so-called elements, but *some other* boundless nature (ἐτέραν τινὰ φύσιν ἄπειρον) (...). It is clear that, observing the change of the four elements into each other, he did not think it appropriate to make one of them the substratum of the others, but *something else beyond* them (τι ἄλλο παρὰ ταῦτα) (Simplicius, *In phys.* 9 24 13–25, DK 12 A 9, TP 2 Ar 163, Gr Axr 9; our italics)³².

Several Aristotelian texts on (τὸ) ἄπειρον where Anaximander is not mentioned have also been taken to be references to Anaximander’s principle. This interpretation, however, is in danger of a *petitio principii*: taken for granted that Anaximander called his principle τὸ ἄπειρον, it is tempting to read it back into these passages as well. One of these passages is, e.g., in *Metaph.* 1053 b 15, where Aristotle speaks of three philosophers (not mentioned by name) and says that the first of them named the one (τὸ ἓν) Love, the other air, and the third τὸ ἄπειρον. The first and second are apparently Empedocles and Anaximenes (or Diogenes of Apollonia), whereas it is tempting to think that the third person must be Anaximander. In *Phys.* 204 b 22 (DK 12 A 16, TP 2 Ar 3, Gr Axr 17), Aristotle speaks about some who take τὸ ἄπειρον σῶμα to be one and simple. Here again, several authors suppose that he is thinking of Anaximander. We must be aware, however, that it was the general problem of τὸ ἄπειρον – the problem of infinity – in the explication of nature with which Aristotle is concerned in these pages of the *Physics*.

From the texts discussed above it can be argued that what Aristotle calls Anaximander’s principle is something quite different from the elements, being rather that which brings them into existence. Nevertheless, it looks as if Aristotle is not able to grasp Anaximander’s intentions with the tools of his philosophical language. He cannot think of Anaximander’s ‘principle’ other than as something material, like the elements (using words like στοιχεῖον and σῶμα), or perhaps as a kind of mixture of them, but different from and even beyond the usual four. Aristotle’s uneasiness on this point is mirrored in the doxography on Anaximander’s ‘boundless’.

We may also conclude that on all occasions where Aristotle mentions Anaximander by name, it can be convincingly argued that nowhere Anaximander is connected directly with τὸ ἄπειρον and that there is evidence that he included him in the group that made ἄπειρος the attribute of something else. It is hard to neglect this witness, the closest in time to Anaximander. Before we try to answer the question what ‘boundless’ for Anaximander was an attribute of, we will take a look at the doxography.

³² Graham has: “something else besides them”.

The doxography on Anaximander's 'boundless'

Our main witnesses are the texts in the doxography that go back to Theophrastus, of which our main source is Simplicius in his commentary on the *Physics* of Aristotle. At first sight, all these texts seem to agree that the source or principle according to Anaximander has to be called τὸ ἄπειρον. On closer inspection, however, the ancient authors demonstrate more or less hesitation as to how to indicate it. Simplicius writes:

Of those who say the source is one and in motion and boundless (ἄπειρον), Anaximander, the son of Praxiades, of Miletus, the successor and student of Thales, said the source and element of existing things was the boundless (τὸ ἄπειρον), being the first one to apply this term to the source. And he says it is neither water nor any other of the so-called elements, but some other boundless nature (ἐτέραν τινὰ φύσιν ἄπειρον), from which come to be all the heavens and the world-orders in them (Simplicius, *In phys.* 9 24 13–25 1, DK 12 A 9, TP 2 Ar 163, Gr Axr 9).

And elsewhere:

And Theophrastus combining Anaxagoras with Anaximander took the words of the former in the same way, as saying that the substratum is able to be a single nature (μίαν αὐτὸν φύσιν). He writes as follows in the *Study of Nature*: “Inasmuch as they are taken in this way, he³³ would seem to make the material principles boundless, as has been said, but the cause of motion and coming to be a single one. And if anyone supposes the mixture of all things to be a single nature indefinite (μίαν φύσιν ἄοριστον) in both kind and size, which is what he seems to mean, it would turn out that he is committed to two principles, the nature of the boundless (τήν τε τοῦ ἀπείρου φύσιν) and mind, so that he evidently makes them altogether corporeal elements just like Anaximander” (Simplicius, *In phys.* 9 154 14–23, DK 12 A 9a, TP 2 Ar 170, Gr Axr 15).

And again elsewhere:

The opposites contained in the substratum, which is a boundless body (ἀπείρω ὄντι σώματι) are separated out, says Anaximander (Simplicius, *In phys.* 9 150 23, TP 2 Ar 169, not in Gr and DK, but see Conche 1991, 137).

Simplicius first states, in a text we discussed already partially in the previous section, that the source (whatever it may be) is in motion and boundless (ἄπειρον, adjective). Then he identifies it as the boundless (τὸ ἄπειρον, noun with definite article). And finally he says, quite enigmatically, that the principle according to Anaximander is not any of the

³³ According to Gr Axr 15, ‘he’ refers to Anaximander, according to TP 2 Ar 170 to Anaxagoras. We think the last is correct. However, the clauses “the cause of motion and coming to be a single one” and “a single nature indefinite” can be said of Anaximander as well, as is clear from both Theophrastus’ and Simplicius’ context.

so-called elements, but some other boundless nature (ἐτέραν τινὰ φύσιν ἄπειρον). These last words are, with slight variations, repeated in the second text: “a single nature” (μίαν αὐτὸν φύσιν), “a single nature indefinite” (μίαν φύσιν ἀόριστον), and “the nature of the boundless” (τοῦ ἀπείρου φύσιν). In the third text Simplicius seems to echo Aristotle *Phys.* 204 b 22 (quoted above) when he writes that according to Anaximander the opposites are separated out of the substratum as a boundless body ἀπείρω ὄντι σώματι. In the previous section we already quoted texts in which Simplicius seems to talk about Anaximander’s principle as something beyond (παρά) the elements.

Pseudo-Plutarch’s version, according to Diels quoting Theophrastus, sounds like this:

After [Thales] Anaximander, who was his associate, said the boundless (τὸ ἄπειρον) contained the whole cause of coming to be and perishing of the world, from which he says the heavens are separated and generally all the world-orders, which are countless. And he declared perishing to take place and much earlier coming to be, all these recurring from an infinite time (ἐξ ἀπείρου αἰῶνος) (Pseudo-Plutarch, *Strom.* 2, Fr. 179 11–30, DK 12 A 10, TP 2 Ar 101, cf. Ar 69, Gr Axr 19).

And again Pseudo-Plutarch, in a text that, according to Diels, goes back to Aëtius:

Anaximander, son of Praxiades, of Miletus says the boundless (τὸ ἄπειρον) is the source of existing things. For from this all things come to be and into this all things perish. That is why countless world-orders are generated and again perish into that from which they came to be. Thus he tells why it is boundless (ἀπέραντόν): in order that the coming to be which occurs may never cease. But he fails by not saying what the boundless (τὸ ἄπειρον) is, whether air, water, or earth, or some other bodies³⁴. So he fails by referring to the matter, but omitting the efficient cause. For the boundless (τὸ ἄπειρον) is nothing but matter (Aëtius, *De plac.* I 3 3, DK 12 A 14, TP 2 Ar 53, Gr Axr 18).³⁵

In the first text, the words ἐξ ἀπείρου αἰῶνος seem to be Plutarch’s rendition of the last words of Anaximander’s fragment: κατὰ τὴν τοῦ χρόνου τάξιν.³⁶ In this expression, ἀπείρος is used as an adjective. In the second text, in which he complains that Anaximander fails to explain what he means, the word is used both as a noun (τὸ ἄπειρον) and as an adjective (ἀπέραντόν). And finally Hippolytus:

Anaximander (...) said the source and element of existing things was a certain nature of the boundless (φύσιν τινὰ τοῦ ἀπείρου), from which come to be the heavens and the world-order

³⁴ Although the text has plurals, Wöhrle translates: “oder ein anderer bestimmter Körper”, and Conche (1991: 69): “ou quelque autre corps”.

³⁵ Gr Axr 18 reads: ἄπειρον instead of ἀπέραντόν.

³⁶ Cf. the juxtaposition of texts in Kirk c.s. (2007: 106–108).

in them. And this is everlasting and ageless (ἀίδιον καὶ ἀγήρω), and it also surrounds all the world-orders. He speaks of time as though there were a determinate period of coming to be and existing and perishing. He has said the source and element of existing things is the boundless (τὸ ἄπειρον), being the first to call the source by <this> term. Furthermore, motion is everlasting, as a result of which the heavens come to be (Hippolytus, *Haer.* 1 6 1–2, DK 12 A 11, TP 2 Ar 75, Gr Axr 10).

Hippolytus' text is in a sense a combination of those of Simplicius and Pseudo-Plutarch. At first he speaks, in almost the same words as Simplicius, of the source as "a certain nature of the boundless" (φύσιν τινὰ τοῦ ἀπείρου). Then he says, like Pseudo-Plutarch that it is everlasting and ageless (ἀίδιον καὶ ἀγήρω). And finally he calls the source 'the boundless' (τὸ ἄπειρον, noun with definite article).

We may conclude that the doxography is as inconsistent as Aristotle, switching between τὸ ἄπειρον as a noun and ἄπειρος as an attribute of something else, be it φύσις, αἰὼν, or σῶμα. Nevertheless, some scholars have doubted that Anaximander used τὸ ἄπειρον (the noun with the article). We already quoted as exceptions De Vogel, Lebedev and Fehling. Havelock, too, argued that Anaximander could not have used the substantive form τὸ ἄπειρον, but that he must have used it "only in an adjectival or adverbial sense".³⁷ Havelock's judgment is quite plain: "The thread of Aristotle's argument when unraveled, just as it reveals no support for the notion that there was a Milesian 'non-finite' (...), also fails to support the notion that Anaximander ever used the conception at all as the principle of everything".³⁸

Perhaps one might argue that it is possible that whatever Anaximander talked about is ineffable, or at least unnamed, and could only be identified by its predicates, or referred to by definite descriptions, by adjectives with the article (τὸ θεῖον, ἀθάνατον, ἀνώλεθρον, and also τὸ ἄπειρον, as in Aristotle, *Phys.* 203 b 6ff., DK 12 A 15, TP 2 Ar 2, Gr Axr 16). However, we think such an interpretation is excluded strictly on a textual basis: just a few lines earlier Aristotle explicitly says that "all the physicists make some other nature (...) a subject of which 'unlimited' is a predicate" (*Phys.* 203 a 16). Moreover, we already mentioned the kind of metaphysical interpretations this reading might lead to.

In the next sections we will elaborate the suggestion that Anaximander did not have the intention to identify a principle called 'the boundless', but that there was something else of which he used 'boundless' as a predicate. Then, the question is: of what was ἄπειρος a predicate?

³⁷ Havelock (1983: 53, see also 54–55, 59).

³⁸ Havelock (1983: 78).

Φύσις

Our suggestion is that the most likely candidate for the subject of which Anaximander's ἄπειρος was a predicate is φύσις. Several authors have stressed the importance of the concept of 'nature' in early Greek thought and also in Anaximander, but no one thus far has taken the step to consider the possibility that 'boundless nature', and not 'the boundless' must have been Anaximander's principle. We will adduce all possible circumstantial evidence for our choice, discuss authors who made another choice, and argue what Anaximander could have meant with φύσις ἄπειρος.

Both in Aristotle and in the doxography on Anaximander the word φύσις repeatedly appears in connection with ἄπειρον. Sometimes φύσις even seems to be the central term: ἑτέραν τινὰ φύσιν τῷ ἀπείρῳ (Aristotle, *Phys.* 203 a 16), ἑτέραν τινὰ φύσιν ἄπειρον (Simplicius, *In phys.* 9 24 13–25, DK 12 A 9, TP 2 Ar 163, Gr Axx 9), ἄπειρὸν τινὰ φύσιν (Simplicius, *In phys.* 9 41 16, TP 2 Ar 167, not in DK and Gr), τὴν τοῦ ἀπείρου φύσιν (Simplicius, *Phys.* 9 26 31–27 23, DK 59 A 41, TP 2 Ar 164, Gr Axx 32; 9 154 14–23, DK 12 A 9a, TP 2 Ar 170, Gr Axx 15; 9 464 19–465 17, TP 2 Ar 175, not in DK and Gr), φύσιν τινὰ τοῦ ἀπείρου (Hippolytus, *Haer.* I 6 1–7, DK 12 A 11, TP 2 Ar 75, Gr Axx 10), μίαν αὐτὸν φύσιν (Simplicius, *In phys.* 9 154 14–23, DK 12 A 9a, TP 2 Ar 170, Gr Axx 15), φύσιν ἀόριστον (Simplicius, *In phys.* 9 24 26–25 11, DK 13 A 5, TP 2 As 133, Gr Axs 3), μίαν φύσιν ἀόριστον (Simplicius, *In phys.* 9 154 14–23, TP 2 Ar 170, Gr Axx 15, DK 12 A 9a), τὴν μεταξὺ φύσιν (Alexander, *In Metaphys.* 1 60.8–10, DK 12 A 16, TP 2 Ar 83, Gr Axx 12). The same holds for the Latin sources: *infinitatem naturae* (Cicero, *Acad. Pr.* 37 118, DK 12 A 13, TP 2 Ar 28, not in Gr), and: *omnium initium esse naturam quandam* (*Turba philosophorum*, Sermo I 38–40, TP 2 Ar 270, not in DK and Gr).

The usual translation of φύσις is 'nature'. However, one has always to be aware that the connotations of both terms do not coincide. The primary and etymological meaning of φύσις is 'growth'.³⁹ In the words of Schmalzriedt: "der aspektreiche und unübersetzbare Ausdruck φύσις bezeichnet ein als 'Gewordensein' verstandenes wesenhaftes Sein".⁴⁰ Patzer stresses that φύσις originally has to do with the world of plants; the word for plant, φυτόν, is made from the same root φυ-.⁴¹ According to Chantraine, φύσις is one of the words that stem from an Indo-European root *-ti-* which were used to indicate actions or instruments, expressing the notion of a hidden but active power. So γένεσις meant the active principle of giving life, as in Homer's *Ilias* Ε 246: "the Ocean which is the vital principle of everything".⁴² On the analogy of the general meaning of γένεσις as described by Chantraine one might say that, generally speaking, the meaning of φύσις is the hidden

³⁹ Cf. Naddaf (2005: 12); Conche (1991: 79); Kahn (1994: 201, n. 2).

⁴⁰ Schmalzriedt (1970: 114).

⁴¹ Patzer (1993: 217–277). Here we may notice a parallel in present-day English: we say of plants and weeds that they *grow* in the pond, whereas we say of fish and frogs that they *live* in the pond.

⁴² Chantraine (1933: 275–277 and 283).

but active power of growth. In Homer the word φύσις occurs only once, in the *Odyssey* (κ 303), meaning the magic power of the plant which Hermes shows to Odysseus as an aid to protect him against Circe's sorcery. Here the word φύσις means the active power of growth as it has resulted in the essential character that has grown in this specific herb.⁴³ One might paraphrase that the general power of growth manifests itself in this specific plant as a magic force.

Heraclitus' famous words φύσις κρύπτεσθαι φιλεῖ (DK 22 B 123, Gr Hct 75) can serve as a commentary on these lines of Homer. Graham has argued at length that φιλεῖν plus infinitive is never used as 'love to', but always to express what he calls a general truth. This means that he regards the usual translation "nature loves to hide", or even "nature loves to play hide-and-seek" as wrong.⁴⁴ He translates "nature hides", or "nature is ever hidden", or "a nature is hidden".⁴⁵ Mouraviev, however, adduces two examples, in Heraclitus (DK 22 B87, Gr Hct16) and Democritus (DK 68 B 228, Gr Dmc 256), where a translation as 'like to do' or 'be wont' is at least possible.⁴⁶ More important in the context of this article is what is said in Heraclitus' text about φύσις. This fragment has to be read together with DK 22 B 1, Gr Hct 8, which says that the λόγος is that which people always are unable to comprehend, and with DK 22 B 112, Gr Hct 123, where acting on the basis of an understanding of things is brought in connection with speaking the truth and wisdom. For Heraclitus it is no longer a god who shows the secret of the nature of a specific plant to a privileged man like Odysseus, but hidden nature as such reveals itself to the wise man (σόφος) through its manifestations.⁴⁷

According to Patzer, φύσις was transferred from the domain of plants to the other domains of life, until it got its ultimate meaning of the most general order of the world of originating and perishing things. This development happened especially in the works of the first Presocratics. In the words of Pohlenz, quoted by Guthrie: "the concept of *physis* a creation of Ionian science, in which they summed up their new understanding of the world".⁴⁸ When the early philosophers are said to have written about φύσις this means that they saw everything under the aspect of growth. In this sense we might say that φύσις is the ἀρχή of everything that exists. As Aristotle says:

ἡ φύσις ἐν τοῖς Φυσικοῖς ἀρχή (*Phys.* 253 b 8).

According to Plato, an early witness, the ancient philosophers meant to say that φύσις is the first creative power:

⁴³ There is an old controversy whether φύσις here means 'form' or 'growth'. However, from the context it is clear that what Hermes wants to show Odysseus is a means to counteract Circe's witchcraft.

⁴⁴ Respectively in Kahn (1979: 105) and Heidel (1910: 107).

⁴⁵ The first two translations are to be found in Graham (2003: 178) and the third one in Graham (2010: 161). Schmalzriedt (1970: 114) already translated: "Die φύσις pflegt verborgen zu sein".

⁴⁶ Mouraviev (2006: 140).

⁴⁷ Cf. Conche (1986: 255): "la nature ne nous montre, ne met sous nos yeux, que l'aboutissement de son geste, non le geste même".

⁴⁸ Guthrie (1985: 82) quoting Pohlenz (1953: 426).

φύσιν βούλονται λέγειν γένεσιν τὴν περὶ τὰ πρῶτα (Plato, *Laws* 892 c).

Actually, this meaning of φύσις is still recognizable in Aristotle's definition of nature as the common feature that characterizes animals, plants and the elements, which all

have within themselves a principle of movement (or change) and rest – in some cases local only, in others quantitative, as in growth and shrinkage, and in others again qualitative, in the way of modification (Aristotle, *Phys.* 192 b 8–16).⁴⁹

And again:

the primary and proper sense of 'nature' is the essence of those things which contain in themselves as such a form of motion (...) And nature in this sense is the source of motion in natural objects, which is somehow inherent in them, either potentially or actually (Aristotle, *Metaph.* 1015a13–19).⁵⁰

It is not coincidental, Patzer maintains, that the works of the early Presocratics were related to as Περὶ φύσεως, and that Aristotle called them φυσιολόγοι (Patzer 1993, esp. 276). Anaximander is said to have been the first to have written about nature, περὶ φύσεως (Themistius, *Oratio* 26 317c, DK 12 A 7, TP 2 Ar 120, Gr Axr 5).⁵¹ Schmalzriedt, however, in his study on the early book titles, has argued that the early Presocratics did not yet use book titles, and that especially the title περὶ φύσεως, used in the doxography for the books of Anaximander and several other Presocratics, goes back to the later fifth century. Although his arguments and conclusions sound plausible, we might mention an interesting point on which Schmalzriedt is rather short and somewhat hesitating.⁵² According to Simplicius, repeated twice, Melissus entitled his book περὶ φύσεως ἢ περὶ τοῦ ὄντος,⁵³ whereas Gorgias is said to have entitled his book περὶ τοῦ μὴ ὄντος ἢ περὶ φύσεως.⁵⁴ The most obvious interpretation, we think, is that both are meant as real book titles, that of Gorgias' book being a persiflage of Melissus' title. More interesting in the context of this article is that Melissus' title, in its turn, reads as a polemical pun on the title περὶ φύσεως. Melissus' paradoxical point, then, was the identification of τὸ ὄν with φύσις, meaning that φύσις is not to be associated with growth and motion as in the early Presocratics, but with static being in the Eleatic sense. This seems to imply that the title

⁴⁹ Translation by F.M. Cornford.

⁵⁰ Translation by H. Tredennick.

⁵¹ DK abusively has: *Oratio* 36 and so have Dumont (1988) and, e.g., Schmalzriedt (1970: 11).

⁵² Schmalzriedt (1970: 71–72).

⁵³ Simplicius, *In phys.* 70.16–17, Gr MIs4, DK 30 A4, and *In de caelo* 557.10–12, Gr MIs5, DK 30 A4.

⁵⁴ Sextus Empiricus, *Adv. Math.* vii, 65ff, DK 82B3.

περὶ φύσεως has been used for at least one of those early books.⁵⁵ Of course this does not prove at all that Anaximander's book was entitled περὶ φύσεως, but at least it indicates that the main concern of those early books was with φύσις.

Here we have to draw attention to a main source of misunderstanding: φύσις in the generalized sense does not yet mean 'Nature' in the collective sense of 'everything that exists', 'the sum-total of things'. This is the meaning the word obtains later,⁵⁶ and which is still one of the meanings of 'nature' in present-day English. For the early Presocratics, however, φύσις is the living essence or the ἀρχή of everything that exists. On the other hand, the word φύσις also became the term for the unique character or essence of something. In Herodotus, who obviously had no philosophical pretensions, it is used often meaning 'natural constitution', 'character' (Herodotus, *Histories* 1 89, 2 5, 2 19, 2 35, 2 45, 2 68, etc.), but even here the connotation 'growth' plays in the background, for instance when he describes the φύσις of the Egyptian country (Herodotus, *Histories* 2 5). Philosophically speaking one may consider Plato, who sometimes uses the word φύσις as a synonym for ἰδέα or εἶδος (e.g. *Philebus* 25a), as the ultimate philosophical expression of this line of development.⁵⁷ Eventually, in the Peripatetic jargon, it became identical with the οὐσία of an individual thing.

Some authors on Anaximander and φύσις

Lebedev rightly maintains that the Peripatetic term φύσις (= οὐσία) cannot be identical with Anaximander's φύσις. After an analysis of the preserved texts he argues that Anaximander's formula must have been χρόνος ἄπειρος, αἰδῖος καὶ ἀγήρω.⁵⁸ Lebedev explicitly places Anaximander in an Iranian and Zurvanistic tradition, as others did before him. The problem with this interpretation is not only that the evidence is rather thin (the way Ohrmuzd and Ahriman are born of the seed of Zurvān is compared with Anaximander's cosmogony), but also that it isolates Anaximander more or less from the continuity of Greek thinking and makes him akin to Persian wisdom. Therefore, we do not follow Lebedev when he replaces the Peripatetic phrase φύσις τις τοῦ ἀπείρου by what he thinks to be Anaximander's formula: χρόνος ἄπειρος.

Let us instead look again at Simplicius' above-quoted account which also contains the famous fragment with Anaximander's rather poetical words. To begin with, Simplicius introduces Anaximander's principle and mentions its difference from the elements. Then he states that the principle is not one of the so-called elements, but ἑτέραν τιὰ φύσιν ἄπειρον. Most authors translate it rather flatly as 'some other boundless nature'

⁵⁵ And not only "that περὶ φύσεως was common in his time, and no more than that" (Kirk c.s. 2007: 103).

⁵⁶ According to Kirk (1954: 227ff.) about the middle half of the fifth century B.C.

⁵⁷ Cf. Patzer (1993: 275).

⁵⁸ Cf. Lebedev (1978 II: 43–45, 58).

(Gr Axr 9), or ‘a different substance which is boundless’ (Guthrie 1985: 76), a kind of equivalent of Simplicius’ τι ἄλλο (‘something else’) at the end of the same text.⁵⁹ We follow Havelock,⁶⁰ who supposes that the phrase ἐτέραν τινὰ φύσιν ἄπειρον is close to an echo of Anaximander’s genuine words, used by Simplicius in his paraphrase introducing the fragment. We follow Havelock again when he states that “one can hazard the guess that Anaximander spoke of *apeirōn physis*”.⁶¹ This means that on this hypothesis ἄπειρος (or ἀπείρων) is an adjective belonging to the noun φύσις. In other words, not τὸ ἄπειρον, but φύσις ἄπειρος or φύσις ἀπείρων has to be considered as Anaximander’s principle. If this is so, φύσις cannot be translated as a mere ‘something’, but it must bear a more pregnant meaning. Unfortunately, Havelock, who scrutinizes critically practically every single word used in connection with Anaximander, does not do the same thing for the word φύσις, even though he regards it as truly Anaximandrian. He seems to consider it as equivalent to ‘essence’. At one place he maintains that what Anaximander may have said was something like “from the beginning the nature of the all was, is, and ever shall be non–finite”. When reconstructing Anaximander’s “imaginary hexameters” he writes even more clearly: “for from a life without-end does the nature of all things exist”.⁶² It is strange, however, that in the last quotation he does not make ἀπείρων an adjective belonging to φύσις but to αἰών.

Guthrie, criticizing Aristotle’s interpretation of what the Milesians meant, says “not ‘matter’ (...) but rather ‘nature’ (*physis*) is the correct keyword”, and elsewhere “*physis*, which is something essentially internal and intrinsic to the world, the principle of its growth and present organization”. However, he then continues: “identified at this early stage with its material constituent (...), it consists of a single material substance”. His only argument for this sudden step seems to be that the Milesians “knew of no other form of existence”. It looks as if Guthrie’s conviction is based on Aristotle, although he had criticized him a few lines earlier for supposing that the Milesians “assumed the world to be made of one material substance”. Guthrie does not identify this *physis* with the boundless, for the last is only “the initial state or *arche*”, from which the diversity of the present order has evolved.⁶³ In other words, according to Guthrie the boundless is the initial state, and *physis* is the principle of the present order of the world. It is hard to see what could be the textual evidence for this dichotomy.

Conche has dedicated a chapter of his book on Anaximander to “La ‘*physis*’”. He notes that for the Ionian ‘physicists’ the word φύσις meant “l’action de faire naître et

⁵⁹ Thus Fehling (1994: 80, n. 185): “φύσις ist hier wie oft (...) ‘etwas in der Natur Vorhandenes’; die Formulierung bedeutet dasselbe wie συμβεβηκός τινι ἑτέρῳ”.

⁶⁰ Cf. Havelock (1983: 54): “an item like [some different nature non–finite] represents the kind of language Anaximander may have used”.

⁶¹ Havelock (1983: 55).

⁶² Havelock (1983, 59 and 81).

⁶³ Guthrie (1985: 82, 83).

pousser". Anaximander's 'nature', he says, is the power of which Parmenides will deny the possibility, it is γένεσις, "la source génératrice universelle", "acte de faire être ce qui n'était pas, de faire passer du non-être à l'être", "principe de croissance des êtres". In this context, Conche uses 'boundless' as an attribute of 'nature': "L'infinité de la nature (cf. φύσις ἄπειρος, Simpl., *In phys.* p. 24, 17⁶⁴)".⁶⁵ He uses expressions like "la *physis apeiros*, en tant que principe de tout" and "la *physis*, objet premier de la *philosophia*". "Être", Conche says, is identical with "être une production de la *physis*". And finally he coins the expression "la φύσις d'Anaximandre". Elsewhere, Conche identifies this *physis* with the boundless: "cette *physis* qu'est l'*apeiron*", "un autre nom pour l'infini est φύσις, la nature". And again elsewhere, he seems to identify φύσις with αἰών, when he translates αἰὼν ἄπειρος as "force vitale infinie", "l'éternité de vie qu'Anaximandre accorde à la nature".⁶⁶ Everywhere else in his book, however, he simply takes "l'*apeiron*" as Anaximander's principle. As we saw, Aristotle says that all the physicists treated 'boundless' as an attribute of something else (*Phys.* 203 a 16). It is perhaps his strange explanation of this text, which forbids Conche to definitely take 'nature' as Anaximander's principle: Aristotle, Conche says, has only those in mind who have on this subject a reasonable opinion, which means that Anaximander is excluded.⁶⁷

Naddaf devotes a whole book to the Greek concept of nature, starting from the observation that it is "unanimously accepted (...) that the concept of *physis* was a creation of Ionian science".⁶⁸ He hangs his argument on a discussion of the expression ἱστορία περὶ φύσεως (enquiry into the nature of all things), which is the title, ascribed since Plato to the investigations of the Presocratic philosophers, although Plato, hinting at Empedocles, Archelaos, Anaximenes, Diogenes, Heraclitus, and Alcmeon, does not mention Anaximander, nor his alleged principle (Plato, *Phaedo* 96 A 8, DK 31 A 76; cf. Suda, *Lexicon alpha* 1986, DK 12 A 2, TP 2 Ar 237, Gr Axr 4; Themistius, *Oratio* 26 317 C, DK 12 A 7, TP 2 Ar 120, Gr Axr 5). According to Naddaf, in the expression ἱστορία περὶ φύσεως the word φύσις has been interpreted in the sense of either 1) primordial matter, or 2) process, or 3) primordial matter and process, or 4) the origin, process and result, the last mentioned being his own choice.⁶⁹ Here we may notice that Themistius and the Suda do not talk about a ἱστορία, but simply said that Anaximander wrote περὶ φύσεως. Havelock already argued that the word ἱστορία suggests a professionalism that has been read back into the Milesians.⁷⁰ So, if anything at all can be concluded from Themistius and the Suda, it is that Anaximander wrote a book about nature and not, e.g., about the boundless. Naddaf

⁶⁴ Quoted above as Simplicius, *In phys.* 9 24 13–25, DK 12 A 9, TP 2 Ar 163, Gr Axr 9.

⁶⁵ Conche (1991: 81, 80, 128, 151, 83).

⁶⁶ Conche (1991: 84, 85, 81, 129, 82, 128, 138, 149).

⁶⁷ Conche (1991: 91).

⁶⁸ Naddaf (2005: 15).

⁶⁹ Naddaf (2005: 20, 17).

⁷⁰ Havelock (1983: 57).

quotes Aristotle's above-quoted passage, in which it is said that "all the physicists see the infinite as an attribute of some other nature".⁷¹ Nevertheless, when talking about what he calls Anaximander's *ἰστορία περὶ φύσεως*, he takes for granted without explanation that *τὸ ἄπειρον* was Anaximander's principle or source. Sometimes, however, he characterizes this principle with words like "natural primordial creative force" and "eternal vital force".⁷² We think it is better, when looking for the meaning of *φύσις* in Anaximander, to start with the above-quoted texts, which go back to Theophrastus and which may contain echoes of Anaximander's own words.

Φύσις ἄπειρος

Generally speaking, the doxographers described what the Milesians were looking for in Peripatetic terms as the search for some stuff, element, or substrate, as the principle of everything. Most of these indications are Aristotelian jargon that certainly was not used by Anaximander. The doxographers used the word 'nature' in that context, with a technical meaning like 'the essence of a thing', and even 'the essence of the all'. Their benchmark was the fivefold definition Aristotle gave in *Metaph.* 1014 b 16–1015 a 2. The most natural way, however, is to understand the word *φύσις* in the expression *φύσις ἄπειρος* (or *φύσις ἀπείρων*) – supposing that Anaximander used it – in a non-technical and so to speak more primitive way, closer to the etymological root *φυ-*, meaning 'growth'. We think this original meaning is well expressed by Diels/Kranz as "Naturkraft", "natura creatrix", or "la source génératrice universelle", as Conche did, "the hidden but active power of growth", as we wrote in the section on the etymology of the word, and not "the 'stuff' of which anything is made", as Burnet and many others, echoing Aristotle, say.⁷³ Even Kahn concedes that "the *ἄπειρον* of Anaximander cannot be reduced to material or quantitative terms. It is not only the matter but the motor of the world, the living, divine force of natural change". How this goes together with his qualification of the *ἄπειρον* as being "primarily a huge, inexhaustible mass, stretching away endlessly in every direction", he does not tell.⁷⁴

In at least one remarkable text Simplicius, speaking of what Theophrastus calls the 'natural philosophers' (*οἱ φυσικοί*), and mentioning Anaximander among them, uses *φύσις* in exactly this sense:

⁷¹ Naddaf (2005: 67–68); Aristotle, *Phys.* 203 a 16.

⁷² Naddaf (2005: 72).

⁷³ Burnet (1920: 10–11).

⁷⁴ Kahn (1994: 233, 238).

(...) nature as the origin of movement” (ἀρχὴ κινήσεως ἢ φύσις) (Simplicius, *In phys.* 9 40 23–41 4, TP 2 Ar 166, not in DK and Gr).

In the same sense we may read a text where Simplicius (or Theophrastus) stresses the difference between this boundless nature and the so-called elements, and says that it is something quite other:

He (sc. Anaximander) took some boundless nature, different (ἄλλην) from the four elements, as the origin (Simplicius, *In phys.* 9 41 16–21, TP 2 Ar 167, not in DK and Gr).

This text apparently refers to Aristotle's qualification of the boundless as 'the other' (ἕτερον) in relation to the elements (Aristotle, *Phys.* 204 b 29, DK 12 A 16, TP 2 Ar 3, Gr Axr 17), which is another way of expressing that it is that which is beyond the elements (τὸ παρὰ τὰ στοιχεῖα), an Aristotelian qualification also repeated, as we saw, by Simplicius. In the same sense already Plato in a text of which Naddaf notes that nature and genesis must be understood as 'productive force'⁷⁵:

'Nature' they want to call the genesis when it concerns the first things (Plato, *Laws* 892 c 2).

The name 'natural philosophers' does not only distinguish them from moral philosophers like Socrates, but also means that they no longer considered the Olympic gods as the powers behind everything, but looked for natural explanations of the phenomena. Nevertheless, Thales is still said to have used the expression "everything is full of gods" (Aristotle, *De anima* 411 a 7–8, DK 11 A 22, TP 1 Th 32, Gr Th 35). It is sensible to assume that Anaximander made one step forward: not 'gods', in the plural, but only one and natural explanation for everything that exists, persists, moves and grows. And this he called the divine (τὸ θεῖον), says Aristotle (Aristotle, *Phys.* 203 b 3–30, DK 12 A 15, TP 2 Ar 2, Gr Axr 16). After having quoted Aëtius: "Anaximenes [says] air [is God]", Stobaeus already noticed:

It is necessary in the case of such remarks to understand that they indicate the powers pervading the elements or bodies.⁷⁶ (Iohannes Stobaeus, *Anthologium* 1 1 29 b, DK 13 A 10, TP 2 As 119, Gr Axs 38).

The expression φύσις ἄπειρος, then, comes to mean something like 'the boundless, inexhaustible power that generates all things and makes them move and grow'. Simplicius, quoting Theophrastus, and speaking about the 'one nature' (μίαν φύσιν), calls it:

⁷⁵ Naddaf (2005: 18).

⁷⁶ TP 2 As119 translates: "die den Elementen oder Körpern inwohnenden Kräfte".

The one cause of motion and coming to be (Simplicius, *In phys.* 9 154 14–23, DK 12 A 9a, TP 2 Ar 170, Gr Axr 15).

In other words, what Anaximander wanted to say is that there is some universal power reigning over all that exists: it is present and presents itself in everything that exists as that which is responsible for their very existence as well as for their movement and growth. It generates the heavens and the worlds within them, it makes the celestial wheels turn incessantly around the earth, it generates the individual things and makes them move, and in the case of plants and animals, makes them grow. Or the other way round: in everything around us, be it a flower, an animal, a magnetic stone, a volcano, a river, the sea, or sun, moon, and stars, a universal power (φύσις) shows itself. We could express this idea very well with Simplicius' words: after he had stated that the natural philosophers were characterized by taking nature as the origin of movement, he continues by saying specifically of Anaximander that he took:

(...) some boundless nature (ἄπειρὸν τινα φύσιν), not being one of the four elements, the eternal movement of which is the cause of the genesis of the heavens (Simplicius, *In phys.* 9 41 16, TP 2 Ar 167, not in DK and Gr).

Obviously, Simplicius tries to understand this wrongly in Peripatetic terms, e.g. as something in between (μεταξύ) the elements, but we may still hear somehow Anaximander's intentions reverberate in these words.

Here a misunderstanding may arise, as if 'nature', the universal power of life, were something 'psychic', apart from 'matter'. This would be a quite anachronistic interpretation. When Thales said "everything is full of gods", he didn't mean that somehow gods were intruded into all things, but that things are the expression of divine powers and that all matter is somehow alive. In the same sense the power of nature can be thought to express itself in everything that exists, but this does not mean that this 'nature' somehow exists apart from the things, just like 'growth', which is the primary meaning of φύσις, cannot be separated from living beings.

When we take 'nature' in the sense as indicated above as Anaximander's key word, then it becomes clear why it can be called 'boundless': the generative power of nature has been there from the beginning of the universe and is since then working in all that exists. Anaximander tried to explain the existence, movement, and growth of everything by means of the concept of 'boundless nature' in the sense of 'the boundless, inexhaustible power that generates all things and makes them move and grow'. The power of nature is boundless in time (everlasting, αἰδιος) (Pseudo-Plutarch, *Strom.* 2, Fr. 179, DK 12 A 10, TP 2 Ar 101, cf. Ar 69, Gr Axr 19; Hippolytus, *Haer.* 1 61–7, DK 12 A 11, TP 2 Ar 75, Gr Axr 10), as well as in space. Therefore it can be said to "encompass all things and govern all things" (περιέχειν ἅπαντα καὶ πάντα κυβερνᾶν). Like an inexhaustible source of movement, growth, and life, it can be said to be "imperishable, immortal, and indestructible" (ἄφθαρτος, ἀθάνατος, ἀνώλεθρος). Being the source of all genesis, it

can be said to be “not generated” (ἀγένητος) and called “the divine” (τὸ θεῖον). Whereas the power of nature itself is boundless, that what is generated by it is susceptible to decay and death. In this sense it can be said that the power that continually creates is also the power that continually destructs: only in this way will coming to be and perishing not cease (οὕτως ἂν μόνως μὴ ὑπολείπειν γένεσιν καὶ φθοράν) (All quotations from Aristotle, *Phys.* 203 b 3–30, DK 12 A 15, TP 2 Ar 2, Gr Axr 16). Nature is not static but always restless, it is, or engenders, “everlasting motion” (κίνησις αἰδίου) (Simplicius, *In phys.* 41 17, TP 2 Ar 167, not in DK and Gr),⁷⁷ like a playing child, a little king who at will builds castles from building-blocks or moves pieces in a game, but also destroys what he has created and turns over the gameboard, to paraphrase Heraclitus (DK 22 B 52, Gr Hct 154). Finally, nature is hidden, as Heraclitus said (DK 22 B 123, Gr Hct 75). This also suggests an answer to the question why Anaximander said so little about his ‘principle’, as the doxographers complained: we know boundless nature, which is the divine, when we scrutinize its workings, we may recognize it in everything that lives, moves, and exists, but considered in itself it is just the boundless power of nature which is hidden in everything that exists.

The mechanisms of boundless nature

The power of nature can be seen working at the very origin of the world, in the way the universe gradually acquired the shape it has now, and in the way things and living beings originate and behave. The mechanisms used by nature to realize these various tasks are manifold, as could be expected from its boundlessness. In the doxography some glimpses of Anaximander's ideas about the natural world are handed down. How the very beginning of the universe as we know it has come into existence is told twice in general terms by Simplicius. He tells us that the eternal motion (κίνησις αἰδίου) of some boundless nature (ἄπειρὸν τινα φύσιν) causes the origin of the heavens (οὐρανοί) (Simplicius, *In phys.* 41 17 TP 2 Ar 167, not in DK and Gr), or of the heavens and the worlds (κόσμοι) in them (Simplicius, *In phys.* 9 24 13–25, DK 12 A 9, TP 2 Ar 163, Gr Axr 9; parallel text in Hippolytus, *Haer.* 1. 6. 1–2,⁷⁸ DK 12A11, TP 2 Ar75, Gr Axr 10). More specifically we are told by Pseudo-Plutarch that when the universe (κόσμος) came into existence,

something capable of generating (τὸ γόνιμον) hot and cold was separated from the eternal (ἐκ τοῦ αἰδίου) (...). From this a sort of sphere of flame grew around the air that surrounds the earth (...). This (sphere) broke off and was closed into individual circles to form the sun, the moon, and the stars (Pseudo-Plutarch, *Strom.* 2, Fr. 179, DK 12 A 10, TP 2 Ar 101, cf. Ar 69, Gr Axr 19).

⁷⁷ In the words of Conche (1991: 136): “La nature infinie est animée d'un mouvement éternel”.

⁷⁸ Graham reads κόσμον, whereas we read, with Wöhrlé, κόσμους.

The text is not easy to understand, partly because its reading is not sure. Here we read, like other scholars, ‘the eternal’ as an another expression for ‘boundless nature’. Kahn translates: “Something capable of generating Hot and Cold was separated off from the eternal [Boundless]”, and Naddaf: “that what produces hot and cold was secreted from the eternal vital force”.⁷⁹ An alternative translation of the words τὸ ἐκ τοῦ αἰδίου γόνιμον is: “that which was capable from all time of generating (warm and cold)”,⁸⁰ but then the question arises, from what it was separated. However this may be, we may learn from this text that the origin of the universe takes place in several steps, by which the one boundless nature differentiates itself. Boundless nature embodies itself, so to speak, in something fertile, a kind of germ, as Guthrie translates, and then the process of differentiation is enacted in the generating of opposites, hot and cold.⁸¹ We may tentatively understand that the flame that surrounds the earth should be identified as the hot, and the earth with its surrounding air as the cold.⁸² Simplicius gives an alternative account, in which he says that:

the opposites that were present in the substratum, which is a boundless body, were separated from it (...) opposites being the warm, the cold, the dry, the wet, and the others (Simplicius, *In phys.* 9 150 20–5, DK 12 A 9, TP 2 Ar 169, only last part in Gr Axr 14).

Here the opposites are generated directly from the ‘body ‘of the ‘substratum’, as Simplicius calls it in Aristotelian terminology, without the intermediate of ‘something capable of generating’. It is explicitly said that they were originally inside the ‘substratum’. Moreover, in Simplicius’ account it concerns all opposites, not only hot and cold. Perhaps we have to understand that hot and cold is the first set of opposites that is generated, resulting in the heavens and the earth, and that the other sets of opposites are generated successively as the process of differentiation unfolds. Elsewhere, Simplicius says that the opposites are separated due to the everlasting motion (διὰ τῆς αἰδίου κινήσεως) (Simplicius, *In phys.* 9 24 13–25, DK 12 A 9, TP 2 Ar 163, Gr Axr 9), using similar expressions as Pseudo-Plutarch, but here, too, he does not mention the γόνιμον. One might speculate that, as the ‘substratum’ is boundless, the number of opposites must be infinite. The generative power of boundless nature (κινήσις αἰδίου) gets embodied in the infinite number of opposites that give birth to the world and all that is in it. The result of this process is the cosmos as we know it, which is, so to speak, the expression of boundless nature.

⁷⁹ Kahn (1994: 85); Naddaf (2005: 72). Naddaf takes this translation from Conche (1991: 138 and 149).

⁸⁰ Kirk c.s. (1983: 132). Cf. TP 2 Ar 101, n. 2. The term τὸ γόνιμον occurs also in a text on Thales, designating the generative power of water: Simplicius, *In phys.* 9 36 8–14, TP 1 Th 411, TP 2 Ar 165.

⁸¹ Guthrie (1985: 90).

⁸² See, e.g., Conche (1991: 204); Kahn (1994: 87).

We may add that the essence of opposites is that they are hostile to one another, they try to destroy each other. Where the hot is, the cold cannot be at the same time, and so on. As already stated above, boundless nature is not only the power of generation, but also that of destruction, because that what is generated is itself not boundless. One may infer that 'being opposed to one another' remains a distinctive feature of everything that exists. Opposition is, as it were, inborn in beings, it is boundless nature incorporated in finite beings. This seems to be expressed in Anaximander's famous fragment:

(...) For they execute the sentence upon one another – the condemnation for the crime – in conformity with the ordinance of time (Simplicius *In phys.* 9 24 13, DK 12 B 1, TP 2 Ar 163, Gr Axr 9; translation Couprie).

The mechanism of destruction is apparently left to the innate opposition or rivalry of beings, thus causing the succession of generations, the cycle of life. After all, the only phrase of Anaximander's fragment that is considered to be original by almost all commentators (the sentence quoted above) is not about genesis but about decay that beings inflict upon each other, expressed in juridical terms.

After the fundamental differentiation of which we spoke above, specific parts of the world, the sphere of flame and finally the circles (or wheels, as other sources have it) of the celestial bodies originate. The resulting eternal circular movements of sun, moon, and stars, we may suppose, are a kind of celestial embodiment of the eternal motion which is boundless nature, as Hippolytus seems to imply:

Motion is everlasting, as a result of which the heavens come to be" (Hippolytus, *Haer* 1 6 1–2, DK 12 A 11, TP 2 Ar 75, Gr Axr 10).

The earth rests motionless in the center of the cosmos. If we may believe that Anaximander's argument was that the earth has no reason to move, being at equal distances from the periphery (Aristotle, *De caelo* 295 b 11–16, DK 12 A 26, TP 2 Ar 6, Gr Axr 21), then the earth is not in an absolute but in a kind of dynamic equilibrium: if it had a reason, the earth would move. In other words, even motionlessness and being at rest are products of restless nature. If we may trust the reports on 'infinite worlds' (e.g. Simplicius, *In De caelo* 615 17–18, DK 12 A 17, TP 2 Ar 192, not in Gr), at least taken as succession in time, we may see therein another confirmation of the boundless creative power of nature, overcoming the decay of one world in originating a new one, *ad infinitum*.⁸³

We are told that animals were generated in moisture, heated by the sun, and that they first were enclosed in prickly barks and later came to land and threw off their barks (Pseudo-Plutarch, *Plac. Phil.* 5 19 908 D 11–14, DK 12 A 30, TP 2 Ar 67, Gr Axr 37).⁸⁴ Here

⁸³ For a recent evaluation of the doxographical evidence, see McKirahan (2001: 49–65).

⁸⁴ For two recent interpretations of these texts, see Gregory (2011) and Kočandrlje and Kleisner (2013).

the pair of opposites hot/dry vs. cold/wet seems to be the motor of a kind of animal evolution. The development of men is said to have been originally from a being maturing inside a kind of fish that as an adult comes ashore, to the people living on land that we are (Plutarch, *Quaest. conv.* 8 8 4, 730 D–F, DK 12 A 30, TP 2 Ar 45, Gr Axr 39). Perhaps here, too, the same opposition plays a role, for elsewhere it is said that the sea gradually dries up under the influence of the sun (Alexander, *In Meteorol.* 3 2, 67 3–12, DK 12 A 27, TP 2 Ar 84, Gr Axr 35), which could have triggered men to become land animals.

The main meteorological agent seems to be wind, for that is said to explain everything, especially thunder, lightning, thunderbolts, firebursts, and hurricanes (DK 12 A 23, TP 2 Ar 38, 63, Gr Axr 30, 31). According to a recent interpretation, wind in the shape of a jet of permanent lightning fire (πρηστῆρος αὐλός, DK 12 A 21, 22, TP 2 Ar 57, 88, 151, Gr Axr 22, 25) was also responsible for the light of the celestial bodies.⁸⁵

Final Remarks

We are aware of the fact that we are challenging an interpretation that is some 2300 years old, assuming that somewhere in the doxography the tradition to consider τὸ ἄπειρον as Anaximander's 'principle' was introduced. As long as we do not possess a copy of his treatise, the interpretation of Anaximander and especially of that which traditionally is called 'the boundless', will always remain a hazardous task. We think that in our interpretation Anaximander's place in the history of philosophy can be better understood. Anaximander is no longer supposed to formulate an answer to a question that in fact had not yet been raised, nor is he supposed to have started philosophical speculation with an unbelievably abstract concept or with a weird kind of indefinable stuff. As Thales did not leave a book, everything we know about him, and especially that he made 'water' the 'principle' of everything, is either hearsay or speculation. But let us presume that he really said "all things are full of gods", then Anaximander can be thought of as correcting him by saying that there is only one divine boundless power of nature that shows itself in everything that exists and moves. Anaximenes, on the other hand, can be understood as correcting Anaximander, as he identifies the boundless power of nature by what he called 'boundless air' (ἀήρ ἄπειρος), which we can observe as the life-giving breath (cf. Pseudo-Plutarch, *Placita* 1 3, 876 A 7–B8, DK 13 B 2, TP 2 As 35, Gr Axs 8) of all animals. Generally speaking, air is the breath of the cosmos, which by rarefaction brings about fire, by condensation wind, clouds, water, earth, stones, and everything else.⁸⁶

⁸⁵ Cf. Couprie (2001); see also Graham (2010: 68); Wöhrle (2012: 64, n. 6, 77, n. 1 and 89, n. 2).

⁸⁶ After we had finished the text of this article we learned that Lebedev later has rejected his own hypothesis that Anaximander spoke of Χρόνος ἄπειρος and has also opted for φύσις ἄπειρος. We do not, however, share his interpretation of it as an Anaxagorean type of 'mixture', as we hope to argue in another publication.

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Anaximander's 'Boundless Nature'

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The usual interpretation has it that Anaximander made 'the Boundless' (τὸ ἄπειρον) the source and principle of everything. However, in the works of Aristotle, the nearest witness, no direct connection can be found between Anaximander and 'the Boundless'. On the contrary, Aristotle says that all the physicists made something else the subject of which ἄπειρος is a predicate (*Phys.* 203 a 4). When we take this remark seriously, it must include Anaximander as well. This means that Anaxi-

mander did not make τὸ ἄπειρον the source or principle of everything, but rather called something else ἄπειρος. The question is, then, what was the subject that he adorned with this predicate. The hypothesis defended in this article is that it must have been φύσις, not in its Aristotelian technical sense, but in the pregnant sense of *natura creatrix*: the power that brings everything into existence and makes it grow and move. This 'nature' is boundless. It rules everything and in this sense it can be called 'divine'. Being boundless, the mechanisms of nature, in which the opposites play an important role, are multifarious. The things created by boundless nature are not boundless, but finite, as they are destined to the destruction they impose onto each other, as Anaximander's fragment says.

KEYWORDS

Anaximander, *Apeiros*, boundless, *Phusis*, nature