

Is regularity according to Empedocles imposed upon or inherent in things?

Gottfried Heinemann (Kassel, Germany)

My topic is Empedocles, DK 31 B 8:

ἄλλο δέ τοι ἐρέω φύσις οὐδενὸς ἔστιν ἀπάντων
θνητῶν, οὐδέ τις οὐλομένου θανάτοιο τελευτή,
ἀλλὰ μόνον μίξις τε διάλλαξις τε μιγέντων
ἔστι, φύσις δ' ἐπὶ τοῖς ὀνομάζεται ἀνθρώποισιν.

"Another thing I will tell you: of all mortal things none has *phusis*, nor any end in accursed death, but only mingling and interchange of what is mingled – *phusis* is the name given to these by men."¹

However, I will start with rational reconstructions of the contexts both in Early Greek Philosophy (sections 1-3) and in Aristotle (sections 4-5).²

1. The distinction presupposed in the title of my paper is taken from Whitehead who, in *Adventures of Ideas*, describes several conceptions of natural law. Three such conceptions, i.e. the doctrines of law (i) as "immanent", (ii) as "imposed", and (iii) as "observed order of succession", he claims to be ultimately rooted in ancient Greek thought.³ Law is described by Whitehead as "identity of pattern" in the succession of events which by the doctrines mentioned is claimed

- ad (i): to express the "characters" – i.e. "essences" or "natures" – of the fundamental things involved,
- ad (ii): to be imposed upon the fundamental things involved by some external agency (typically divine), or
- ad (iii): to be just exhibited in systematic observation.⁴

¹ Transl. KRS, but with *phusis* left untranslated. KRS have "birth" at both occurrences. I will argue that this is misleading insofar as the second occurrence describes a usage with which Empedocles complies. – See also my more detailed discussion of the fragment in sections 4.3.2. and 4.3.6. of my *Studien II*.

² It was only in polishing sections 1-3 that I became aware of the correspondence with D. Graham's interpretation, e.g. in his 2006. Taken superficially, Graham's topic is matter, mine is (and has been for long) regularity. But these are just directions from which the more central topics are approached.

³ Whitehead, *AI VII 5*, p. 111. Whitehead's discussion of the topic fills the rest of ch. VII and ch. VIII. – More than a decade ago, Michael Hampe suggested me to try to describe pre-Platonic conceptions of nature in terms of Whitehead's distinctions. Having failed then, I am resuming that topic not without hesitation. Maybe the real question to be answered is whether Whitehead's distinctions are illuminating at all.

⁴ *AI VII 5-7*, p. 111-116 – "characters": 111.38 and passim; "essences": 112.2 and passim; "nature(s)": 112.36, 113.23.

In Whitehead, (i) and (ii) are linked with doctrines of internal and external relations, respectively. Granted Whitehead's own event ontology, the link is required since the relevant identities are relations between fundamental entities. But there are no event ontologies in ancient Greek thought.

Moreover, the idea of fundamental entities with essential characters that underlies Whitehead's distinctions was not elaborated before Plato and, particularly, Aristotle. In early Greek philosophy, it was still to emerge. Its pre-history in early Greek philosophy is just a matter of rational reconstruction.

2. Early Greek philosophy started with recurrent phenomena rather than things.⁵ Accordingly, the earliest occurrences in the Presocratic corpus of *phusis* and its cognates suggest that *phusis* was regularity in the succession of recurrent phenomena. The *phusis* of any such phenomenon was its regular way to come about. Regularity was not just immanent in the phenomena, but was assumed to express some underlying character, such as *dikê* in Anaximander and *logos* in Heraclitus, of the world as a whole. Hence *phusis*, in Heraclitus, was the way phenomena "come about *kata ton logon*", and was therefore derived from that character. *Erinyes*, assistants of *Dikê*, had to control the natural size of the sun.⁶ Divine steering, assisted by thunderbolt, illustrates the same idea.⁷

3. In post-Parmenidean cosmologies,⁸ the notion of phenomena coming about is replaced by the notion of mixtures being formed of fundamental entities. Fundamental entities are assumed to pass the Parmenidean Is-or-Is-Not test and, therefore, to persist eternally.⁹ Post-Parmenidean cosmologies are agreed on the general description

- of fundamental entities as ungenerated, imperishable stuffs, with varying distribution in space, and
- of complex things as being formed by mixture thereof, and hence to vanish as the mixture dissolves.

⁵ Such are the clouds in Xenophanes (Mourelatos 2008 – see, particularly, *ibid.* 157 f.) and the sun being new day by day in Heraclitus (DK 22 B 6).

⁶ DK 22 B 1; DK 22 B 3+94 (Pap. Derveni), "natural": ...]ou *kata phusin*. See section 4.12.4. in my *Studien II*.

⁷ "Steering": *kubernâô* (DK 22 B 41); similarly Anaximander (DK 12 A 15 = Aristoteles, *Phys.* 203b11), Parmenides (DK 28 B 12.3), and Diogenes of Apollonia (DK 64 B 5); "thunderbolt": DK 22 B 64. See section 6.4.3. in my *Studien II*.

⁸ Parmenidean *doxa* (DK 28 B 8.50 ff. etc.) is in in many respects a prototype of post-Parmenidean cosmology. See Graham 2006, 169 ff., 201 ff.

⁹ That is, fundamental entities share the "Eleatic properties" (Graham 2006, 165 and *passim*). – "Is-or-Is-Not test": ἡ δὲ κρίσις περὶ τούτων ἐν τῶιδ' ἔστιν / ἔστιν ἢ οὐκ ἔστιν (DK 28 B 8.15-6). To fail means to require either that "'is not' is unavoidable" (B 2.5: *chreôn esti mê einai*) or that being and not-being are simultaneously distinguished and confused (DK 28 B 6.8). Heraclitean "everliving fire kindling in measures and going out in measures" (DK 22 B 30, tr. KRS) is quite a paradigm case of the latter. – But I will not spell out in general what that test amounts to in cosmology. My locution may indicate a mere family resemblance between arguments

The Is-or-Is-Not test also suggests that fundamental entities exist independently of, and hence are externally related to, each other.¹⁰ In particular, mixture is external to the elements (Empedoclean or not) that enter into the mixture. And so are attraction and repulsion of Empedoclean elements, with unlike elements attracting or repulsing each other as Love or Strife prevails in their environment. But Love may be internal to, and indeed is described by Empedocles as a factor in the make-up of, complex things.¹¹

There is no clear indication that a *phusis* is attributed to fundamental entities in post-Parmenidean cosmologies.¹² Non-fundamental things are said to have a *phusis* by Parmenides, Empedocles, Diogenes of Apollonia, and Democritus.¹³ But we have no traces of that term in Anaxagoras and no undisputed occurrences in Democritus beyond anthropology, ethics, and education.¹⁴ In addition, Empedocles denies that non-fundamental things, being formed by mixture and exchange of components, have a *phusis* in the strict sense.¹⁵

The meaning of *phusis* is nowhere in the Presocratic corpus explained. The clearest account is in the Hippocratic treatise *On ancient medicine* (*VM*) where "Empedocles or others who have written about nature from the beginning (*peri phuseôs ... ex archês*)" are described as answering such questions as "what *F* is and how it originally came to be and from what things it was compounded" – with *F* indicating "man" or any other kind of complex things.¹⁶ This is quite in accordance with Empedocles' remark that mixture and exchange of components are conventionally referred to by *phusis*.¹⁷ As this makes good sense of the occurrences mentioned, the meaning of the term may be rendered as "composition of fundamental entities".¹⁸ Derivatively, the term may also refer to the fundamental entities of which the thing in question is (or things in general are) composed.¹⁹ But the question in what sense non-fundamental things are denied by Empedocles to have a *phusis* is left unanswered thereby.

¹⁰ Of course, Parmenidean *Alêtheia* also precludes external relations. Their admission is a key assumption in Parmenidean *Doxa* (see particularly DK 28 B 8.53-59) and, hence, in post-Parmenidean cosmology.

¹¹ DK 31 B 17.20 ff. = fr. 66.251 ff. P. (ibid. v. 22=253: *emphutos*). – My P. refers to Primavesi 2011.

¹² Primavesi's translation of DK 31 B 110.5 (= fr. 125.5 P.) suggests that a *phusis* is attributed by Empedocles to each "Element als Gedankenträger". I am quite sceptical about this (for a synopsis of interpretations of that verse, see section 4.3.3. in my *Studien II*) – In private communication, Primavesi recommended me to take the suggestion mentioned seriously. But that's another story.

¹³ DK 28 B 10, B 16; DK 31 B 63 etc.; DK 64 B 2; DK 68 B 297

¹⁴ Section 4.8.1. in my *Studien II* gives a list of Democritean occurrences of *phusis* and cognates. Concerning DK 68 A 58 / B 168 and DK 68 B 297 see ibid. sections 4.8.2. and 4.8.3., respectively

¹⁵ DK 31 B 8 (see below).

¹⁶ [Hippocrates], *VM* 20,1 (tr. Schiefsky, with my *F* replacing "man"). – In the sequel, my "nature" is just a placeholder translation of *phusis*.

¹⁷ DK 31 B 8.4.

¹⁸ This is Aristotle's *prôtê sunthesis* account of *phusis* (*Met.* V 4, 1014b37) – see below.

¹⁹ This is Aristotle's *stoicheia* account of *phusis* (*Met.* V 4, 1014b33) – see section 4.8.2. in my *Studien II*.

Post-Parmenidean cosmologies attribute characters to fundamental entities in various ways.²⁰ Whereas the characters as such are stable, their effects depend upon the mixture entered by the entities in question – that is, by relations which are, in Whitehead's language, external to them.²¹ Hence, on the one hand, characters of fundamental entities do not just account for, but *are* recurrent patterns in the course of events and may thus count, in Whitehead's language, as laws. Yet, on the other hand, the fundamental entities assumed by post-Parmenidean cosmologies are never observed. Observable regularity presupposes non-fundamental things to be involved. Hence, the attribution of *phuseis* to non-fundamental things suggests a reductionist account that explains regularity by the characters of fundamental entities of which non-fundamental things are composed. This explanation is far from complete since the way of composition, i.e. the relevant external relations of fundamental entities, must also be taken into account.

4. Aristotle comments in *GC* II 6 that Empedocles "says nothing about nature".²² There is an intentional ambiguity in that comment. On the one hand, "about nature" (*peri phuseôs*) is the formula conventionally used to indicate the genre of writing to which Empedocles contributed.²³ The usage is probably not as old as Empedocles: both Philolaos and Aristophanes do not seem to be familiar with it.²⁴ Our oldest evidence of the formula is the passage in the treatise *On ancient medicine* quoted earlier.²⁵ The passage also suggests that Empedocles had a reputation as the paradigmatic writer "On nature". Aristotle's comment suggests that the reputation is unwarranted.

On the other hand, "nature" (*phusis*) must also be taken as a technical term of Aristotelian science in that comment. Aristotle's point is this.²⁶ Compounds such as homogenous animal parts are not just mixtures of certain elements. Rather, each compound is the kind of stuff it

²⁰ See, e.g. Parmenides: DK 28 B 8.56-59; Empedocles: DK 31 B 6 (= 49 P.), B 21.3-6 (= 66.311-4 P.); Anaxagoras: DK 59 B 4a (Sider 1981: "shapes colors and savors"), B 4b (elementary qualities etc.) – "characters": *dunameis* (DK 28 B 9.2). Note that Aristotle (*GC* II 3, 330b3-5) describes a system of correlations of elements with pairs of elementary qualities which may be traced back via [Hippocrates], *Nat. hom* (c. 7) and *Carn.* (c. 2) to Empedoclean influences (cf. Wright 1981, 26 f.; my *Studien II*, section 6.2.3. (ii)).

²¹ See, e.g. Empedocles: DK 31 B 21.7, *ibid.* v. 13-14 (= 66.315 P., *ibid.* v. 321-2); Anaxagoras: DK 59 B 1, B 4b etc.

²² Aristotle, *GC* II 6, 333b18: οὐδὲν ... περὶ φύσεως λέγει.

²³ The *Katharmoi* are in another genre. See Primavesi 2007.

²⁴ Concerning Philolaos, see my *Studien II*, section 5.4.2.1. In Aristophanes, the topic is indicated by such formulas as *peri tôn meteôrôn* ("about things in the sky"). Presumably, *peri phuseôs* became the standard formula only after *meteôra* etc. had become terms of abuse. See my *Studien II*, section 5.5.1.

²⁵ [Hippocrates], *VM* 20,1 (as quoted above). Note that my "on" and "about" both translate the Greek *peri*. – I see no evidence that the complex titles "On nature or on being" and "On non-being or on nature" attributed by Simplicius to Melissus and (allegedly) by Sextus to Gorgias, respectively, are genuine. Hence, there is also no evidence that older usages involving the book title "On nature" are thus echoed by Melissus and more indirectly by Gorgias. See my *Studien II*, section 5.3.2.3.

²⁶ *GC* II 6, 333b3 ff. See my *Studien II*, section 4.3.6.3.

is by virtue of a "specific proportion" (*logos*) in which the elements enter into the mixture.²⁷ Aristotle's example is bone which, according to Empedocles, consists of two parts water, two parts earth and four parts fire.²⁸ Regularity in the formation of homogenous animal parts must therefore be described as the maintenance of proportion. Empedocles fails to account for that maintenance according to Aristotle. Love and Strife alone won't do. Aristotle takes Love and Strife to be just forces of attraction and repulsion, causing just mixture and dissolution.²⁹ As no proportion is thus specified, any proportion is allowed to occur. Hence, Love and Strife can give rise to chance products only.³⁰ Aristotle insists that the maintenance of proportion requires a formal cause.³¹ The formation of natural things is due to "their being such and such, and this is the nature of each thing, about which he [i.e. Empedocles] has nothing to say".³²

In a sense, Aristotle's concluding comment that Empedocles "says nothing about nature"³³ is as trivial as the observation that there is no Aristotelian natural science in Empedocles. But the point in Aristotle's criticism is different. Aristotle insists that regularity is to be explained in terms of "nature" (*phusis*). That's what the formula "about nature" indicates according to Aristotle, and what Empedocles fails to accomplish. Taken in Whitehead's terms, Aristotelian natural science is a doctrine of Law as immanent, the Empedoclean account of mixture and dissolution is not – or is so understood and, therefore, rejected by Aristotle.

²⁷ Ibid. b11, cf. b16 and a34: *logos*. – Disregarding proportion, there are just 15 kinds of mixture to be formed of 4 elements. Aristotle rightly insists that radical reductionism concerning quality requires sophistication concerning quantity.

²⁸ DK 31 B 96.1-3 (= 100.1-3 P., see below, section 8), quoted by Aristotle at *Anim.* I 5, 410a4-6, and alluded to at GC II 6, 333b10-1 and elsewhere. By contrast, sinew is formed of the same elements, but the proportion is two parts water, one part earth, one part fire (DK 31 A 78 = 97 P.). In his discussion of the parallel at *Met.* I 10, 993a15-24, Cooper (2012, 340 f.) observes that there is probably no elaborated doctrine but just occasional remarks in Empedocles concerning the ratios involved in the formation of compounds. See, particularly, Cooper's note on DK 31 B 98 where "almost equal": *isê malista*, v. 1) refers to orders of magnitude only (ibid. 343n23, but see also Wright 1981, 238; Graham 2006, 212 f.).

²⁹ GC II 6, 333b12-3: συγκρίσεως γὰρ <τὸ μὲν>, τὸ δὲ διακρίσεως αἴτιον. Graham (2006, 195; ibid. n. 23 f.) rightly remarks that this misrepresents Empedocles insofar as Love and Strife are attraction and repulsion of unlike elements. But Aristotle's argument is not impaired by this. – It should be also noted that in the sequel to the verses Aristotle quotes at *Anim.* I 5, 410a4-6, Love is described by Empedocles as *Harmoniê* (DK 31 B 96.4). The maintenance of proportion seems to be thus described as being the business of Love (see below section 8).

³⁰ GC II 6, 333b15-6: τύχη δ' ἐπὶ τούτοις ὀνομάζεται, ἀλλ' οὐ λόγος, echoing Empedocles, DK 31 B 8.4: φύσις δ' ἐπὶ τοῖς ὀνομάζεται.

³¹ Accordingly, soul, including the nutritive soul that governs the formation of bodily parts (*Anim.* II 4, 415a23 ff.), is primarily described by Aristotle as form (ibid. 1, 412a19-20: οὐσία ... ὡς εἶδος). There is, of course, no contradiction in also describing the nutritive soul as efficient cause of that formation (GA II 1, 735a14 ff.; ibid. 4, 740.b.25 ff. etc.): that's the way form qualifies as *phusis* according to Aristotle.

³² Ibid. b16-8: τῶν δὴ φύσει ὄντων αἴτιον τὸ οὕτως ἔχειν, καὶ ἡ ἐκάστου φύσις αὐτῆ, περὶ ἧς οὐδὲν λέγει (tr. Williams).

³³ Ibid. b18 (see above).

5. The Aristotelian conception of "nature" (*phusis*), as explained in *Phys.* II 1 and *Met.* V 4, is fundamental to that criticism. "Nature," says Aristotle in *Phys.* II 1, "is always the nature of something, and is in the thing of which it is the nature."³⁴ Aristotle's "in" echoes the earlier occurrences in the relevant chapter of "in", "in itself", and "implanted,"³⁵ referring to certain features in the make-up of that thing. Aristotle allows the relevant features to be specified either by "insofar as it is a specimen of its kind"³⁶ or by "insofar as it happens to be of stone, or earth, ...,"³⁷ thus equating "nature" (*phusis*) with form or matter, respectively.³⁸ Conversely, form and matter qualify as "nature" (*phusis*) by virtue of being an internal "*archê* of motion and rest".³⁹ The definition of "nature" is thereby linked with the definition of efficient cause: *phusis* is described by Aristotle as an internal "Wherefrom-the-*archê*-of-motion-and-rest".⁴⁰

Similarly, "nature (*phusis*) in the primary and strict sense" is equated in *Met.* V 4 with "the *ousia* of natural things"⁴¹ – and hence, given Aristotle's What-was-it-for-*F*-to-be-*F* (*ti ên einai*) account of *ousia*,⁴² with form. But Aristotle also allows the equation of *phusis* with *ousia* to be combined with a "primary composition" account of *ousia*, as in the Empedoclean verses quoted as an example in *Met.* V 4.

³⁴ *Phys.* II 1, 192b34: ὑποκειμένον γὰρ τι, καὶ ἐν ὑποκειμένῳ ἐστὶν ἡ φύσις ἀεί. As far as I can see, the account Aristotle gives in *Cat.* 2 of *en hupokeimenô* applies: ἐν ὑποκειμένῳ δὲ λέγω ὃ ἐν τινι μὴ ὡς μέρος ὑπάρχον ἀδύνατον χωρὶς εἶναι τοῦ ἐν ᾧ ἐστίν (to be *en hupokeimenô* is to be "... in something, but not as a part, and incapable of existing outside", *Cat.* 2 1a24-5). It should be noted that *Cat.* 5, 3a7 ff. allows only accidents to be *en hupokeimenô* – but see also Oehler's qualifications (1984, 216). In view of *Phys.* II 1, 192b34, the clause in *Cat.* 5 is inconsistent with the equation of *phusis* with *ousia* at *Met.* V 4, 1014b35 ff. (which is also presupposed at *Phys.* II 7, 198b9 and *GC* II 6, 333b3 b14 ff.).

³⁵ *Ibid.* b22: ἐν ᾧ ὑπάρχει πρῶτως; b13, b27-32: ἐν ἑαυτῷ etc.; b19 ἔμφυτος.

³⁶ *Ibid.* b17: ἢ μὲν τετύχηκε τῆς κατηγορίας ἐκάστης

³⁷ *Ibid.* b19-20: ἢ δὲ συμβέβηκεν αὐτοῖς εἶναι λιθίνοις ἢ γηϊνοῖς ... – Note that this clause is later qualified by the claim that, in natural things, form supervenes matter (*Phys.* II 2 194b8-9: ἔτι τῶν πρὸς τι ἢ ὕλη· ἄλλω γὰρ εἶδει ἄλλη ὕλη).

³⁸ "Form": τὸ εἶδος τὸ κατὰ τὸν λόγον (*Phys.* II 1, 193b1-2, with λόγος = ὁ λόγος ὁ τοῦ τί ἦν εἶναι (*Phys.* II 3, 194b27). – The What-was-it-for-*F*-to-be-*F* (*ti ên einai*) account of *phusis* is, at least, implicit in *Phys.* II.

³⁹ *Phys.* II 1, 192b20-3: ... ὡς οὐσης τῆς φύσεως ἀρχῆς τινὸς καὶ αἰτίας τοῦ κινεῖσθαι καὶ ἡρεμεῖν ἐν ᾧ ὑπάρχει πρῶτως καθ' αὐτὸ καὶ μὴ κατὰ συμβεβηκός. In my shorthand, *kai aitian* is skipped (but see below). – Note that *kai mê kata sumbebêkos* (b22-3) does not necessarily echo *sumbebêken* (b19). Aristotle can hardly sustain the claim that matter is accidental. But his top-down account of supervenience – form supervenes on matter (*Phys.* II 2, 194b9) but matter is determined by form (*Phys.* II 9, 200a7-13) – is beyond the scope of my present paper. See my "*Sôma organikon*".

I have left *archê* untranslated. There are good reasons suggesting a temporal connotation (hence, *phusis* = something internal from where beginning and end of the change come). See King 2001, 19 ff.

⁴⁰ *Phys.* II 3, 194b29-30: ὅθεν ἡ ἀρχὴ τῆς μεταβολῆς ἢ πρώτη ἢ τῆς ἡρεμῆσεως. Cf. *Met* V 4, 1014b18-20: *phusis* is (3) ὅθεν ἡ κίνησις ἢ πρώτη ἐν ἐκάστῳ τῶν φύσει ὄντων ἐν αὐτῷ ἢ αὐτὸ ὑπάρχει (numbering inserted from Ross 1924). – I have skipped *prôte* ("direct") which has no equivalent in *Phys.* II 2.

⁴¹ *Met.* V 4, 1015a13-4, tr. ROT; *ibid.* 1014b36.

⁴² *Met.* V 8, 1017b21-3 – and of course, *Met.* VII, *Anim.* II etc. *passim*

"In still another sense the *ousia* of natural things is called *phusis*, e.g. when the *phusis* is claimed to be the primary composition, or as Empedocles describes that locution: "There is no *phusis* of any existing thing, but there is only mixture and exchange of components: *phusis* is just the name applied to that by men."⁴³

6. This is an abridged version of fr. 8. The more complete version, transmitted by Plutarch and others, is quoted in full at the beginning of my paper.

Aristotle's discussion in *GC* II 6 leaves no doubt that he understands Empedocles to endorse the primary composition account of *phusis* described in the last two verses:⁴⁴ his point is that Empedocles fails to elaborate that account sufficiently. Hence, the primary composition account of *phusis* must be absent from the first verse claiming that "there is no *phusis* of any existing thing".⁴⁵ As a matter of fact, the first two verses quoted by Aristotle presuppose the term *phusis* to mean something different from mixture and exchange.⁴⁶

There is a well-known parallel of that verse with the denial of *genesis* in fragments 9, 11 and 12. In fr. 11 and 12, *genesis* is explicitly equated with absolute becoming, and is thus taken in a very strict sense. Empedocles denies that anything "comes to be that did not exist before", or "comes to be out of what is not at all".⁴⁷ A similar sense seems to be presupposed when *phusis* is denied in fr. 8. In the claim that "there is no *phusis* of any existing thing", *phusis* is best understood as echoing the phrase "beginning from nothing to spring into existence" used by Parmenides to describe the absurdity of absolute becoming.⁴⁸

The insertion of v. 1 into the quotation at *Met.* V 4 is therefore misleading. The meaning of *phusis* in that verse is absolute becoming, and has neither to do with primary composition nor with *ousia*. So why was that verse inserted at all? – I don't pretend to have a really good answer to this. But it should be noted that the same question may be asked concerning another passage where the first lines of fr. 8 are quoted by Aristotle.⁴⁹ According to *GC* I 1, the Empedoclean claim that "there is no *phusis* of any thing, but only mixture and exchange of

⁴³ *Met.* V 4, 1014b35-1015a3: ἔτι δ' ἄλλον τρόπον λέγεται ἡ φύσις ἢ τῶν φύσει ὄντων οὐσία, οἷον οἱ λέγοντες τὴν φύσιν εἶναι τὴν πρώτην σύνθεσιν, ἢ ὡσπερ Ἐμπεδοκλῆς λέγει ὅτι "φύσις οὐδενὸς ἔστιν ἐόντων, | ἀλλὰ μόνον μίξις τε διάλλαξις τε μιγέντων | ἔστι, φύσις δ' ἐπὶ τοῖς ὀνομάζεται ἀνθρώποισιν". – "Describes that locution": *legei* (a1), see section 4.3.6.5. in my *Studien II*.

⁴⁴ This is also indicated by the correspondence of *suntethê* (*GC* II 6 333b9) with *synthesis* (*Met.* V 4, 1014b36).

⁴⁵ In view of the line omitted by Aristotle, "mortal" may be inserted before "thing". But nothing depends on this – neither pertaining to the meaning of *phusis* nor to any Empedoclean doctrine. There is no indication that Empedocles assumed immortal things (such as Love and Strife, or the elements) to have a *phusis* in whatever sense.

⁴⁶ Otherwise, the verses are inconsistent, claiming that there is no *a* but only *a* (with *a* = *phusis* = mixture and exchange).

⁴⁷ DK 31 B 11.2: γίγνεσθαι πάρος οὐκ ἐόν, B 12.1: ἔκ οὐδ' ἀμ' ἐόντος γενέσθαι.

⁴⁸ DK 28 B 8.10: τοῦ μηδενὸς ἀρξάμενον, φῦν.

⁴⁹ *GC* I 1, 314b4 ff. As in *Met.* V 4, the second line in fr. 2 is omitted. – For details and discussion, see section 4.3.6.4. in my *Studien II*.

components"⁵⁰ is a restatement of the doctrine that "generation and destruction occur by aggregation and dissolution".⁵¹ That is to say, generation is not to be described as *phusis* but, rather, as the formation of compounds by mixture and exchange. The quotation in *Met.* V 4 seems to convey a similar message, and may be paraphrased as follows.

Generation is not to be described as *phusis* but, rather, as the formation of compounds by mixture and exchange. Hence, the term *phusis* has no application at all unless it is redefined so as to refer to the latter.

So far, I have discussed the mutilated version of the fragment quoted by Aristotle. Concerning the more complete version, two remarks are in order.

7. The equation of *phusis* with *genesis* assumed in my interpretation of fr. 8.1 is not meant to suggest that older usage is reflected thereby. Rather, my description of older usages – *phusis* was regularity in the succession of recurrent phenomena, the *phusis* of a phenomenon was its regular way to come about⁵² – is meant to leave all such questions open as the Parmenidean Is-or-Is-Not test suggests. My description is ambiguous in view of that test, and so is the meaning of *phusis* described.

What it is for a phenomenon to come about, may be either described in terms of absolute becoming, or in terms of compounds being formed by mixture of ungenerated and imperishable stuffs. The primary composition account of *phusis* reflects the innovation characteristic of post-Parmenidean cosmology. By contrast, the absolute becoming account of *phusis* turns out to be untenable. The fact that *phusis* is tacitly equated in fr. 8.1. with absolute becoming may suggest that this is closer to older usage. But the conclusion is untenable that older usage corresponds to the absolute becoming account.

8. The Is-or-Is-Not test also suggests that essential characters of fundamental entities be distinguished from external relations. In particular, distribution in space is external to the elements involved. And so are Love and Strife, i.e. the agencies that effect the distribution. Mixture and, hence, the formation, transformation, and dissolution of compounds are externally imposed upon the elements.⁵³

Empedocles also claims that Love (but not Strife) is mixed with the elements.⁵⁴ Hence, on the one hand, Love is external to the elements. But on the other hand, Love is internal to the compounds formed of them. And so is the structure Love imposes upon the elements. Aristotle complains in *GC* II 6 that Empedocles fails to explain in terms of *phusis* the maintenance

⁵⁰ *GC* I 1, 314b7-8: φύσις οὐδενός ἐστιν, ἀλλὰ μόνον μίξις τε διάλλαξις τε μιγέντων (Bekker's text; Joachim has the ellipsis of v. 2 marked by three points before *alla*).

⁵¹ *Ibid.* b5-6: συνιόντων γὰρ καὶ διαλυομένων ἢ γένεσις συμβαίνει καὶ ἢ φθορά ("restatement": *dio legei ...*, b6-7).

⁵² See above section 2.

⁵³ See DK 31 B 17.3-13 (= 66.234-243 P.) etc.

⁵⁴ See DK 31 B 17.19-26 (= 66.250-257 P.).

of specific proportions in the formation of homogenous animal parts. Given Aristotle's account of *phusis*, the complaint is warranted. But that's not the Empedoclean account.

The formation of bones is described by Empedocles as follows.

"And the kindly earth received into its broad hollows / of the eight parts two of the brightness of Nestis / and four of Hephaistos; and these came to be white bones, / marvellously held together by the gluing of Harmony."⁵⁵

Only the first three lines are quoted by Aristotle.⁵⁶ In view of the last line, Aristotle's complaint may appear to be unwarranted. "Harmony" (*Harmoniê*) is another name for Love.⁵⁷ Hence, the maintenance of proportion is described as being effected by a divine agency.⁵⁸ Assuming that Love is internal to the compound, and is a feature in its *phusis* (though not a proper component), Empedocles does explain the maintenance of specific proportions in terms of *phusis*.

Aristotle is not impressed – that is, he has no reason to be so.⁵⁹ He can argue that the divine agency implanted in all kinds of compound is always the same. On the one hand, Love imparts to the combination of elements diverse proportions, as the kind of compound requires. But that is just another way of saying that, on the other hand, the kind of compound depends upon the proportion Love imparts to the combination of elements. Hence, the Empedoclean account of the maintenance of specific proportions – and of order in general – is essentially a divine steering account.⁶⁰ Whether the divine agency works from outside or from within makes no real difference.

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⁵⁵ DK 31 B 96: ἡ δὲ χθών ἐπίηρος ἐν εὐστέροισι χοάνοισιν / τῶ δύο τῶν ὀκτῶ μερῶν λάχε νήσιδος αἴγλης, / τέσσαρα δ' Ἡφαίστοιο· τὰ δ' ὅστέα λευκὰ γέγοντο / Ἄρμονίης κόλλησιν ἀρηρότα θεσπεσίηθεν (tr. Wright) – That is, bone consists of 2 parts earth, 2 parts water, and 4 parts fire.

⁵⁶ *Anim.* I 5, 410a4-6,

⁵⁷ See Wright 1981, 210 ad loc.

⁵⁸ "Divine": *thespsiêthen*, DK 31 B 96.4 (cf. Wright 1981, 210 ad loc.)

⁵⁹ But I know of no direct reaction to what may be called the *Harmoniê* account of *phusis*.

⁶⁰ See above, section 2.

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