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## Life Cycles beyond the Human: Biomass and Biorhythms in Heraclitus\*

All parts of Heraclitus' cosmos are simultaneously living and dying. Its constituent stuffs ("biomasses") cycle endlessly through physical changes in sweeping patterns ("biorhythms") that are reflected in the dynamic rhythms of Heraclitus' own thought and language. These natural processes are best examined at a more-than-human level that exceeds individuation, stable identity, rational comprehension, and linguistic capture. B62 ("mortals immortals"), one of Heraclitus' most perplexing fragments, models these processes in a spectacular fashion: it describes the imbrication not only of humans and gods but of cosmic masses more generally, and its language mimics the natural relations that it names, or rather intimates through its grammatical and syntactical indeterminacy. The remaining fragments amplify the uncertainties and the exhilarations of Heraclitus' worldview along the same lines. His approach to nature raises urgent questions about how human beings fit into the cosmos, not least by challenging our intuitive conceptions of life and death, our material makeup, and our entanglements with our natural surroundings. In doing so, he provides vital lessons for contemporary ecological awareness, and proves to be an unexpected ally.

**Keywords:** Heraclitus, nature, life, death, physical change, process, strife, Presocratics, philosophical language, obscurity, relational ontology, river fragments, *logos*, rationality, ecology

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Abbreviations and numberings used for Heraclitus' texts and translations follow those of two editions: Diels and Kranz 1951–1952, cited as "A1," etc. for testimonia; "B1," etc. for fragments (with "DK 22" understood); and Laks and Most 2016, vol. 3, cited as "P1," etc. for biographica; "D1," etc. for fragments; "R1," etc. for reports (testimonia). Further abbreviations indicate translations. Capitalized Roman numerals refer to the numbering system used by Kahn 1979; "KRS" + Arabic numerals refer to that used by Kirk, Raven, and Schofield 1983. Unattributed translations are my own.

How alive is the Heraclitean cosmos? The question is one way into a larger inquiry into the role of life in the early Greek philosophers known as the Presocratics, who were, I want to suggest, not only philosophers of nature (*phusiologoi*) but also philosophers of life. This is true whether we look to the so-called material monists or pluralists (Thales to the atomists), who typically identify the principle or origin of reality with a single physical element (water, the indefinite, air, fire, air, or earth) or their interplay, or whether we look to the Eleatics (Parmenides, Zeno, and Melissus), who are immaterial monists and who treat Being (that which *is*) as the only metaphysical reality (it is said to be featureless, unchanging, immobile, and singular or “One”) and who demote Becoming (that which changes, has plurality, differentiation, and physical qualities) to the status of not-being.

The case for becoming as the mark of a philosophy of life is easy to make. Becoming is moved by a principle of vitality and motion; it exhibits life in the very churn of natural and physical processes, understood in the root sense of *phusis*, which derives from the verb *phuō*, “to grow.” But the process of Presocratic becoming is two-sided, since it involves coming into existence (life or being) and passing away (death or no-longer-being). The two processes of life and death are not simply two faces of a single coin. They are inextricably and indivisibly one. That is the paradox of becoming: to be, something must be capable of no longer being. The concept of becoming does not seek to capture and preserve being. Rather, it seeks to allow being to live a mortal life. By contrast, Eleatic Being, which is conceived as everlasting and immortal, has as its principle aim the negation of not-Being. As critics of Becoming and as exponents of absolute Being, the Eleatics give us a desperate vision of life, insisting as they do that life should always be. It is never permitted to change, move, or even acquire and exhibit discernible features, for these would mar the perfected quality of life so conceived.

In capturing a certain logic of life (as ever living) and in pressing it to an extreme (by denying the reality of not-Being), the Eleatics render life strangely inanimate, thereby producing a kind of still life or a motionless ontology. Zeno’s ever-stationary arrow (Arist. *Ph.* 6.9, 239b5–7 = DK 29A27) is a vivid example of the paradoxes of motion that immobilize Being. As Diogenes Laertius notes, “Zeno abolishes motion (κίνησις ἀναιρεῖ).” In support of the claim, he quotes Zeno: “What is in motion moves neither in the place it is in nor in one in which it is not” (Diog. Laert. 9.72 = DK 29B4 = KRS 324). We could say that the Eleatics kill life out of a desire to immortalize it, while the philosophers of natural processes promote life in its prolific exuberance and superabundance. They “abolish immobility and rest from the universe (ἡρεμίαν μὲν καὶ στάσις . . . ἀνῆρη),” as if to abolish death itself.<sup>1</sup> But they can do so only at the cost of producing the paradox that nothing is permanent in life beyond impermanence itself. This is a well-known conclusion,

1. Aët. 1.23.7 (said of Heraclitus) = A6 = R47.

one that was familiar even in antiquity.<sup>2</sup> What is less well acknowledged is that the early Greek philosophers were philosophers of life in one form or another.

Heraclitus' philosophy of nature is also a philosophy of life, but he puts a stamp on it that is all his own. He arrived in the middle of the Presocratic boom, around 500 BCE. His writings have survived as small fragments, but they may have originated as fragments too: they were apothegmatic sayings, phrased as declarative statements that finally declare nothing. Heraclitus issued pronouncements with the self-assured authority of the Delphic oracle (an association that he cultivated) but with the artfulness of a poet. Each of his sayings is a compressed gem that challenges its readers to unpick its meaning, or rather meanings in the plural, because each one is so constructed as to exclude the possibility of singular, definitive meaning. Heraclitus' sayings read more like riddles than like statements: the closer one looks, the more opaque they become—whence his two most famous sobriquets, “The Obscure” (ὁ Σκοτεινός) and “The Riddler” (αἰνικτής).<sup>3</sup> The vast majority of his sayings are constructed as puzzles that can be read either forwards and backwards like palindromes (the clearest example being B119: ἦθος ἀνθρώπῳ δαίμων, “a man's character is [determines] his *daimōn*” or “a man's *daimōn* determines his character”)<sup>4</sup> or by grouping words differently like a Rubik's cube, each time producing different, often opposed meanings, though unlike the Rubik's cube his sayings admit of no one solution (B62 being the best illustration of this, as we shall see).<sup>5</sup> The result is a series of brain-twisters rather than a corpus of dogmatic assertions or teachings. Heraclitus wanted to provoke his readers, to

2. Cf. Empedocles, DK 31B26.8–12 = fr. 28 Inwood: “Thus insofar as they [sc., the elements] learned to grow as one from many, / and finish up as many, as the one again grows apart, / in this respect they come to be and *have no constant life*, / but insofar as they never cease from constantly interchanging, in this respect *they are always unchanged* in a cycle” (οὕτως ἦι μὲν ἐν ἐκ πλεόνων μεμάθηκε φύεσθαι / ἡδὲ πάλιν διαφύντος ἐνὸς πλεόν' ἐκτελέθουσι, / τῆι μὲν γίγνεται τε καὶ οὐ σφισιν ἔμπεδος αἰών· / ἦι δὲ τὰδ' ἀλλάσσονται διαμπερὲς οὐδαμὰ λήγει, / ταύτηι δ' αἰὲν ἔασιν ἀκίνητοι κατὰ κύκλον; emphasis added). Heraclitus' most explicit version of the same paradox is perhaps found in B84a = LI: μεταβάλλον ἀναπαύεται, “it rests by changing.” The grammatical subject of the fragment is not given, but there is no need for one: the subject is anything that exists in Heraclitus' system. The sense must be that change is the steady and unchanging state of nature: it is how nature, ever restless, “rests,” with ἀναπαύεται put, as it were, in scare quotes. Thus, too, Mansfeld 1967: 12; Emlyn-Jones 1976: 113; Kahn 1979: 197. In B20, resting (ἀναπαύεσθαι) is connected to the quietness of death, which is, of course, only ever partial in Heraclitus' restless universe.

3. ὁ Σκοτεινός: A1a, A3a, B10, DK 31A8, 59A4, etc.; R5–14, R68, R78, etc.; Hippol. *Haer.* 9.10.10. αἰνικτής: A1.6 (Timon of Phlius); δι' αἰνιγμῶν: R13 (Simplicius). “Heraclitean obscurity” (Ἡρακλείτειος σκότος) appears in other sources.

4. The tiniest example is a predicate clause in B50: ἐν πάντα, “one is all things” or “all things are one,” which is expanded in B10 in another palindromic sequence: ἐκ πάντων ἐν καὶ ἐξ ἐνὸς πάντα.

5. I am grateful to an anonymous reader for directing me to Mouraviev 1996, an intense study of palindromic and other complex verbal patterns in Heraclitus. I regret not having known this essay, which comes as a welcome confirmation of my own intuitions, even if Mouraviev does not take up the fragment that will be of concern to me below (B62). For a partial forerunner, see Marcovich 1967: 148–49 ad (2).

make them puzzle out meaning—and not only his own, but that of the universe. “Don’t listen to me but to the *logos*,” he writes at the start of his book (B50), probably at the end of its introduction, the *logos* in question being that of nature (his book may have been titled *On Nature*).<sup>6</sup> Heraclitus’ hope and expectation was that his readers might in this way learn to be active thinkers who engaged with the puzzles of reality itself. His writings are entry cards to a reconceived world of nature.

Diogenes Laertius offers a convenient thumbnail sketch of Heraclitus’ theory (it may stem in part from Theophrastus):<sup>7</sup>

ἔδοκει δὲ αὐτῶι καθολικῶς μὲν τάδε· ἕκ πυρὸς τὰ πάντα συνεστάναι καὶ εἰς τοῦτο ἀναλύεσθαι· πάντα δὲ γίνεσθαι καθ’ εἰμαρμένην καὶ διὰ τῆς ἐναντιοτροπῆς ἡρμόσθαι τὰ ὄντα· καὶ πάντα ψυχῶν εἶναι καὶ δαιμόνων πλήρη. Εἶρηκε δὲ καὶ περὶ τῶν ἐν κόσμῳ συνισταμένων πάντων παθῶν.

Diog. Laert. 9.7 = A1.7

His opinions, speaking generally, are the following. All things are constituted out of fire and are dissolved into it. All things come about [or “are,” i.e., “exist”] . . .<sup>8</sup> and are fitted together thanks to the contrariety of their character [or “through opposition”]. And everything is full of *psuchai* and divinities. He also spoke about everything that happens in the world.

Heraclitus keeps nature alive by ensuring that it never comes to a standstill, either in its constitution or in its seizure by language and thought. This is succinctly put by Aëtius, who gives us the statement that was quoted above without its stinging tail: “Heraclitus abolishes immobility and rest from the universe, for these belong to corpses (ἔστι γὰρ τοῦτο τῶν νεκρῶν).”<sup>9</sup> This is strong language and, in later opinion, pointedly antithetical to the Eleatics’ abolition of motion.<sup>10</sup> But it is perfectly in keeping with the tenor of Heraclitus’ other known sayings and reported thought.<sup>11</sup> It is no exaggeration to say that Heraclitus’ writings are the liveliest but also the most opaque of all the texts that have survived from the Presocratics. They exuberantly trespass the limits

6. Diog. Laert. 9.5, 9.12 = A1.5, A1.12; R10, R59, R74. The title may be a guess (Kirk, Raven, and Schofield 1983: 184). Diogenes records a number of other such guesses (Diog. Laert. 9.12 = A1.12), but *On Nature* is frequently attested. On the reach of *logos*, see n.66 below.

7. See Kerschensteiner 1955; Finkelberg 2017: 158.

8. I have omitted a reference to fate, which is a later Stoicizing touch. Heraclitus’ thinking is fate-free.

9. Aët. 1.23.7 = A6 = R47.

10. Themistius, Simplicius, and Philoponus repeat the statement, “Zeno abolishes motion (κίνησιν ἀναιρεῖ).” It seems likely that the reports about Heraclitus and Zeno, given their near-identical language, were understood, if not shaped, as dialectical responses to each other.

11. Heraclitus ridiculed sleep as a kind of death and wakefulness as its opposite (A16, B1, B21, B26, B73, B89), though the dividing lines are a little more tangled than they at first appear. See Granger 2000.

of logic, producing enigmas, paradoxes, and contradictions at every turn. Lavishing on the world his love of contradiction, Heraclitus ensured that the world can never come to rest. Indeed, nature for him is a place of dynamic tension and contradiction.

### MORTALS IMMORTALS

One of the most enigmatic of his sayings directly concerns the problem of life and death.<sup>12</sup> It is also the most intricate of his fragments:

ἀθάνατοι θνητοί, θνητοὶ ἀθάνατοι, ζῶντες τὸν ἐκείνων θάνατον, τὸν δὲ ἐκείνων βίον τεθνεῶτες.

Hippol. *Haer.* 9.10.6 = B62

Immortal mortals, mortal immortals, living the death of those, dying the life of those. (D70; trans. modified)

The Greek is even more baffling than the translation lets on. The first clause is a pile of four Greek words lacking connectives and punctuation,<sup>13</sup> each of which can be construed as either nouns or adjectives, and whose overall arrangement is that of a chiasmus (ABBA or BABA): “Immortals mortals mortals immortals” (construed as nouns) or “Mortal immortals immortal mortals” (construing the first term in each pair as an adjective and the second as a noun). A natural first step towards disambiguation would be to read a copula into the statement as Hippolytus did, though this hardly solves the dilemmas.<sup>14</sup> Are immortals somehow mortal? Or are mortals immortal? There is no way to decide. The pileup of the terms suggests an indifference to the question: “Immortal, mortal, mortal, immortal—what difference does it make?”<sup>15</sup>

The next two clauses are just as indeterminate grammatically. The words generate a chiastic pattern in the form of ABAB (living—death—life—dying)

12. See Betegh 2006: 253 with n.60.

13. This is how it would have appeared in Heraclitus’ original as well, *pace* Dilcher 1995: 138.

14. *Haer.* 9.10.6: “He [sc., Heraclitus] states, by common consent [or “consistent with his own views”?], that what is immortal is mortal and what is mortal is immortal, with the following words: [B62]” (λέγει δὲ ὁμολογουμένως <καὶ> τὸ ἀθάνατον εἶναι θνητὸν καὶ τὸ θνητὸν ἀθάνατον διὰ τῶν τοιοῦτων λόγων· [B62]). To make sense of B62, Hippolytus must filter it through Christian eschatology by treating the fragment as a symbol of resurrection (ἀνάστασις) in the immediate continuation, as he does with B63 in the next lines (ἐπανίστασθαι). Heraclitus, by contrast, leaves us with the discomforts of unresolved and unresolvable meaning.

15. Kahn 1979: 218 writes of B62, “it makes no differences which term [of the first four words] we take as subject, which as predicate.” And if it does not, “then it makes no difference which term serves as antecedent for the possessive pronoun ‘their’ (*ekeinōn*) in the two following clauses.” This sort of convolution seems to be a signature trait of Heraclitus’. Kahn 1979: 205 makes a similar point about B80: “‘Conflict is Justice’ or ‘justice is strife.’ The word order does not permit us to distinguish subject and predicate; it makes no difference, since Heraclitus is in effect identifying the two terms.”

that, syntactically untangled, suggests a different chiasmus, in the form of ABBA (living—death—dying—life), but which nonetheless produces a stalemate of logic and commonsense. For what is it to live a death or to die a life? And who is being referred to with “those”? Are the immortals *living* the death of the mortals, or vice versa? Are the immortals *dying* the life of the mortals, or vice versa? Again, the opacity of the grammar suggests a kind of indifference: “The ones live the death of the others, the others die the life of those—what difference does it make?”

Finally, the two pairs of clauses change shape depending on how we answer both sets of questions. If immortals live the death of mortals, is that the reason why mortals are immortal or why immortals are mortal? And if immortals die the life of mortals, does that throw light on the first two pairings of the sentence? Either way, when we look back over the whole sentence, we discover that it is structured by a single overarching chiasmus that can be framed in several different ways, depending on which element is being stressed, for example:

ἀθάνατοι θνητοί, | θνητοὶ ἀθάνατοι, || ζῶντες τὸν ἐκείνων θάνατον, | τὸν δὲ ἐκείνων βίον τεθνεῶτες

Mortal(s) immortal(s), immortal(s) mortal(s), || living the death of those, dying the life of those.

A (life)	B (death)		A (life)	B (death)
		or		
A (death)	B (life)		B (life)	A (death)

Only, the chiasmi will have different shapes and different meanings depending on how we pair each of the members:

ἀθάνατοι   θνητοί	A   B or B   A (depending on which word is a noun or adjective)
θνητοὶ   ἀθάνατοι	A   B or B   A (depending on which word is a noun or adjective)
ζῶντες   τὸν ἐκείνων θάνατον	A   B or B   A (depending on the referent of ἐκείνων)
τὸν δὲ ἐκείνων βίον   τεθνεῶτες	A   B or B   A (depending on the referent of ἐκείνων)

This doubling up of the chiasmic patterns and rhythms disrupts the simpler sentence patterns, namely the overarching chiasmi: AB || AB and AB || BA, etc. If we take into account these new intra-chiasmic divisions,

ἀθάνατοι | θνητοί, | θνητοὶ | ἀθάνατοι, || ζῶντες | τὸν ἐκείνων θάνατον, | τὸν δὲ ἐκείνων βίον | τεθνεῶτες

immortal(s) | mortal(s) | mortal(s) | immortal(s) || living | the death of those, | dying | the life of those

the result will look something like this:

A | B | B | A || A | B | A | B

that is,



Immortals | Mortals | Mortals | Immortals || living (I) | the death of those (M), | dying (M) | the life of those (I)  
(whereby Immortals live the death of Mortals and Mortals die the life of Immortals)

OR

A | B | B | A || B | A | B | A

Immortals | Mortals | Mortals | Immortals || living (M) | the death of those (I), | dying (M) | the life of those (I)  
(whereby Mortals live the death of Immortals, Mortals die the life of Immortals)

and so on, until every last permutation has been exhausted, along the following lines:

	A   B		B   A		B   B		B   A
or:	B   A		B   A		A   B		B   A
or:	A   B		B   A		B   A		A   B
or:	A   B		A   B		B   A		B   A, etc. <sup>16</sup>

The chiasmic variations are at once grammatical (running across and variously grouping nouns, adjectives, participial verbs, and pronouns) and semantic (producing equivalencies or distinctions). But the end effect is a blurring of every possible distinction among the several parts of the sentence.

Clearly, Heraclitus has taken great pains to produce this stalemate of language and logic.<sup>17</sup> Every meaningful difference has been erased by the potential pairings of opposed terms. Not only is there no way to distinguish mortals from immortals or living from dying, but we cannot even tell who or what the subjects in question are. Is he speaking of gods and humans? Or is he including all life-forms, for instance the physical stuffs—the biomasses—that make up the natural world and that endlessly cycle through transformations, passing into and out of existence in one form only to return in another?<sup>18</sup> Scholarly opinions are divided, though increasingly the latter view is gaining ground.<sup>19</sup> Yet even the differences that might

16. Translated into English, the first chiasmus will read, “Immortal mortals, mortal immortals,” or “Immortals (are) mortal, mortals (are) immortal,” etc., with the second chiasmus reading, “Mortals live the death of mortals, mortals die the life of immortals,” or “Immortals live the death of mortals, mortals die the life of immortals,” and so on.

17. The inspiration may well be Hom. *Od.* 24.64 (ἀθάνατοι τε θεοὶ θνητοὶ τ’ ἄνθρωποι), an expression that Heraclitus inverts and then scrambles, as ps.-Heraclitus and Maximus of Tyre later notice and seek to unscramble again in their identical rewriting of B62. Cf. Maximus, *Diss.* 4.4.80–81 Trapp: σκόπει καὶ τὸ Ἡρακλείτου· “θεοὶ θνητοὶ, ἄνθρωποι ἀθάνατοι.” For ps.-Heraclitus, see below. This would not be the only place where Heraclitus deforms a Homeric precedent (e.g., B53).

18. Fire is “ever living” (ἀείζωον, B30) but also extinguishable (B31), and the same is true of all the other physical constituents of nature (B36). Cf. Vlastos 1955: 361.

19. Kahn 1979: 219; Graham 2006: 125; Betegh 2013: 252–53; and Vieira 2023: 209–210 accept that physical stuffs are being named in B62, against the conventional line, which assumes that humans and divinities are the topic, e.g., Gigon 1935: 123–25; Marcovich 1967: 240–41; Dilcher 1995: 148; Finkelberg 2017: 101; and Bossi 2009: 303, who, however, seems quite willing in the end to extend the



be said to exist between one physical stuff and another or between these and gods or men are *themselves* being erased in the fragment, which, I suspect, is precisely the desired effect, as is the notion that the cycles occur in a binary and sequential fashion (this becomes that) and not in a more radical collapsing of differences (this is simultaneously that at every moment in time). I will return to the problem of simultaneities further below.

Against the objection that B62 names masculine plurals, namely θνητοί and ἀθάνατοι, and not cosmic stuffs or biomasses, there are three good counters, all of which are at work in the ancient and modern readings of the fragment that extend its reach beyond humans and gods conventionally understood. First, as Gábor Betegh argues, the logic of B62 radically “redraws the possible sphere of application of the terms ‘mortal’ and ‘immortal,’” which opens the way to the fragment’s cosmic understanding.<sup>20</sup> Whether Heraclitus was the first to produce this kind of semantic shift is another question. Ps.-Heraclitus, for his part, was not deterred by the masculine plurals. He rewrote B62 to make explicit its referents in a way that Heraclitus does not (θεοὶ θνητοί· [τ’] ἄνθρωποι ἀθάνατοι, etc.), but nonetheless understood the fragment to refer, symbolically if obscurely, to cosmic nature (τὰ φυσικά) (*Quaest. Hom.* 24.3–4). Earlier in the sixth century, Theagenes of Rhegium (*fl.* c. 520 BCE) could easily have set the stage for Heraclitus’ moves with his elemental reading of Homer’s divinities (DK 8B2). But for the conflation of divine presences with natural principles, we need look no further than elsewhere in Heraclitus, for instance B67, where Zeus appears in the guise of a thunderbolt, or B32, where τὸ σοφόν (“the Wise”), a cosmic principle, “does not and does want to be called by the name of Zeus” (KRS 228; trans. modified). “God” (ὁ θεός) likewise appears as a cosmic force in the fragments.<sup>21</sup> The same kind of ambiguity underlies B62, where gods (if that is what they are) both are and are not mortal—that is, they are and are not gods,<sup>22</sup> just as the physical masses of nature (once we make the interpretive leap to τὰ φυσικά) are and are not immortal. This is not to say that Heraclitus is an allegorical thinker, but only that his thought obliges his readers to reimagine the conventional boundaries of ordinary sense-making, in part by personifying and then de-personifying cosmic processes.

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logic of the fragment to the nature of the cosmos as a whole (314). Schofield 1991: 32 wants it both ways, but divides things up rather haphazardly: “mortal” refers to the human soul, “immortal” to the physical constituents of nature (he names only earth and water).

20. Betegh 2013: 253.

21. A9, B26, B102, and the references given at n.36 below.

22. Adding a further step, Snell 1926: 368 sees more than a shared ambiguity in the two fragments; he connects them thematically. τὸ σοφόν does not want to be called “Zeus,” he explains, because “Zeus” (Ζηνός) indicates “life” (ζῆν) and “es [sc., das Weise] ist Leben *und* Tod.” This is a bold interpretive move (there is no obvious hint of death in the fragment), but on reflection it is both fully warranted and deeply profound: the mutual entanglement of life and death runs through a great deal of Heraclitus’ thought, and often where we least expect it.

The second consideration follows on from the first: human beings can be said to be immortal only in virtue of their participation in the cosmic process.<sup>23</sup> The logic of B62 thus proceeds from human beings *qua* mortal to their participation in immortality and from there to their *phusis qua* beings *tout court*, thanks to which they are both mortal and immortal, cycling into and out of quasi-life and quasi-death, just like any other entity in the cosmos. The remaining fragments bear out this understanding, most prominently B36, which is the conceptual twin of B62:

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

For *psuchai* it is death to become water, for water it is death to become earth; from earth water comes to be, and from water, *psuchē*. (KRS 229)

This, too, is an account of the life cycle of nature's biomasses as they pass through the stages of life and death in an endless procession. Wherever Heraclitus invokes natural processes (*phusis*), he is immediately drawing our attention to cosmic nature. No individual natures can fail to be subsumed by this framework, least of all individual human beings.<sup>24</sup> Ancient interpreters were the first to grasp this fact, and some modern scholars follow in their wake. Hippolytus refers B62 to the antinomies of the cosmos as a whole: "Heraclitus says that the All (τὸ πᾶν) is divisible indivisible, created uncreated, mortal immortal (θνητὸν ἀθάνατον), *logos* time (λόγον αἰῶνα), father son, god just" (*Haer.* 9.9.1 = A50). And Maximus of Tyre draws the same conclusion, construing B62 as evidence of physical change: "What you behold is change in physical bodies and the alteration of things coming into being. [Maximus quotes in revised form the second half of B62 here.] What you see is a chain of life and a cycle of change in physical bodies, in which the whole is renewed" (μεταβολὴν ὁρᾶς σωμάτων καὶ γενέσεως ἀλλαγῆν. . . . διαδοχὴν ὁρᾶς βίου καὶ μεταβολὴν σωμάτων, καινουργίαν τοῦ ὅλου, *Diss.* 41.4.140–41, 148–49 Trapp; trans. Trapp).<sup>25</sup> In the intervening lines,

23. Betegh 2013: 253; Kahn 1979: 217–18: "immortals are defined as beings whose life is nourished by our death," i.e., they are "elemental bodies [and] new forms of life," both animal and vegetal; Graham 2006: 125 appeals to the "more general [i.e., extended] sense" of immortal natures. The life cycle of individual human beings (ἐνιαυτός; *orbis aetatis*) also occupied Heraclitus (A13, A19). See Fränkel 1938a and Bollack and Wismann 1972: 182–84. But in my view, the human pattern and its peculiar rhythm (Fränkel 1938a: 90) fall under the larger category of the life cycles that pervade nature as a whole.

24. This is how I understand B119 (ἦθος ἀνθρώπων δαίμων), which at Porter 2022: 22 I render thus: "At the core of a human being lies an inhuman entity that is extrinsic to it and immortal—a *daimōn*, or divinity," viz., cosmic nature in its divine aspect. I now see that Bollack and Wismann 1972: 230–31 and 329 read B119 and its import in a similar fashion. The relevance of B119 to B62 should be obvious.

25. Kahn 1979: 153 and Betegh 2013: 253–54 cite Maximus in support of their readings, but do not mention Hippolytus.

Maximus paraphrases B62 using the same cosmic logic: “fire lives earth’s death and air lives fire’s death; water lives air’s death and earth lives water’s (ζῆι πῦρ τὸν γῆς θάνατον καὶ ἀήρ ζῆι τὸν πυρὸς θάνατον· ὕδωρ ζῆι τὸν ἀέρος θάνατον, γῆ τὸν ὕδατος, 41.4.146–47 Trapp; trans. Trapp). The paraphrase translates the fragment into its cosmic equivalent.

The third counter has to do with levels of meaning and the question of exemplarity in Heraclitus. Heraclitus consistently cites instances from everyday life to exemplify cosmic meaning, from rivers, tides, mist, and the course of the sun, to roads, barley drink, fish, pigs, monkeys, dogs, asses, corpses, dung, circles, carding wheels, children’s toys, bows, lyres, and his own kitchen’s midden or hearth. These are not exactly cosmic images or emblems, though they can serve this purpose. After all, the cosmos is located in the everyday life of objects, too. But these same images also have a further and, I believe, deeper purpose, for they ultimately *displace* the human-centered view of the world by directing our gaze towards the nonhuman object-world. In doing so, they open a view onto what might be called a “democracy of objects” that are said by Heraclitus to be “common” (ξυνά) inasmuch as they belong to the cosmos as a whole.<sup>26</sup> On such a view, no individual entity and no individual physical process is more natural or more significant than any other. Correspondingly, every scale of values, every *scala naturae*, must be rejected and give way to the dynamic logic of the whole, which is governed by relations that are constituted through contrasts but not ordered by hierarchies of value.<sup>27</sup> This flattening of ontology permits Heraclitus to move effortlessly from any part to the whole, for parts are simply an instance of the commonality that stretches across nature in a *palintropos harmoniē*.<sup>28</sup> A parallel to B62 is B53, “War is the father and king of all (πάντων),” where an extrapolation can and must be made from the implied masculine referent of πάντων (“gods and men,” mentioned in the continuation) to an unrestricted universal, cosmic sense (“all things”) that includes but exceeds “gods and men.” Such a move is dictated by B80, where war is said to be ξυνός and (therefore) to implicate “all things” (πάντα), in keeping with τὸ ξυνόν as it is defined elsewhere (B2, B89, B113, B114, A16.127, 131, 133–34), namely as that which enjoys an unrestricted universal sense.<sup>29</sup> B62 enacts

26. See Porter 2022: 14–15. The quoted phrase is from Bryant 2011.

27. A similar dispersal of value across everything that exists is found in Stoicism. See Porter 2020: 234n.21.

28. Cf. Bryant 2011: 245–90 on the concept of “flat ontology.”

29. DK translate πάντων in B53 with “aller Dinge,” and are followed by Vlastos 1955; Guthrie 1974: 197; Kahn 1979: 208; Dilcher 1995: 198; and Finkelberg 2017: 104–105, all of whom compare B80 and sometimes B114, and implicitly lean on the unrestricted reach of “Zeus” in B64 (τὰ δὲ πάντα οἰακίξει Κεραινός) and B32. Finkelberg 2017: 105 further adduces Philodemus, *On Piety* (R53). On this view, “gods and men” are to be taken as “examples” of the larger principle (Guthrie 1974: 197). Gigon 1935: 119; Kirk 1962: 246; Marcovich 1967: 146–48; and Bollack and Wisman 1972: 185–87 reject the extrapolation to all things and construe “war” in a literal sense in B53. One last comparandum is found in B30, “The cosmos is the same to all” (κόσμον τόνδε, τὸν αὐτὸν πάντων), as

its own kind of leveling. By challenging the clear-cut distinction between mortals and immortals and by redistributing the terms across the whole of nature, it opens the door to an all-encompassing redescription of the cosmos.

Heraclitus' sentence in B62, while challenging, is not an absurdity. It is a riddle that invites us to reenact in our minds and for ourselves the very indistinctions that it performs grammatically. Untranslatable and unreadable even in the original (it cannot be faithfully translated into ordinary Greek), the sentence is grammatically and semantically undecidable.<sup>30</sup> Any given rendering, be it a translation or a paraphrase, will reduce the complexity of the sentence and will end by resolving this undecidability, assuming one even can. The best translation, then, is no translation. Instead, to read the sentence one has to run it forwards and backwards like a palindrome, while juggling its several parts like the gears of a Rubik's cube.<sup>31</sup>

By abolishing any meaningful difference between mortality and immortality or life and death, Heraclitus reinforces a central lesson of his teaching. All parts of nature are simultaneously living and dying. As we progress through life, we are not merely nearing death; we are additionally dying as we live. And the same is true for the physical stuffs that make up the universe. Differently put, and to quote another fragment to be discussed below (B60), the way up *is* the way down.<sup>32</sup> Death is less a terminus than a feature of change, as Heraclitus' treatments of the life cycle of nature show. Nature transforms itself through endless permutations.

## THE PHYSICS OF NATURE'S CHANGES

### (i) CHANGE (WATER AND FIRE)

Examples of nature's transformational process are abundant in Heraclitus' remains, but three fragments in particular are among the most explicit and dramatic of these. The first attributes change to a cycle that pivots around *psychē* (a word we

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understood by Betegh and Piano 2022: 239 ("including men and gods, and all other things that make up the world").

30. KRS 239 captures this undecidability as few other renderings do: it offers only permutations but no definitive translation, and for that reason comes as close to rendering the original Greek into English as any translation can: "*Immortal mortals, mortal immortals* [or *mortal immortals, immortal mortals*; or *immortals are mortal, mortals are immortal*; or *immortals are mortals, mortals are immortals*, etc.], *living their death and dying their life*" (italics in original). The undecidability of "their" adds further complications, as we saw.

31. Perhaps it is a coincidence, but *ἐναντιοδρομίας* ("running the opposite way") appears in a testimony (A8, Aët.), said of τῶν ὄντων. Inspired by Aëtius, Diels sought to replace the transmitted MSS reading of *ἐναντιοτροπῆς* with *ἐναντιοδρομίας* in A1.7 (= Diog. Laert. 9.7), but this has not won favor. (Dorandi prints *ἐναντιοτροπῆς*.)

32. As Emlyn-Jones 1976: 110 well observes, the forces that maintain the coherence of things in Heraclitus "are also [i.e., "simultaneously," 98 and 112] acting towards their disintegration." The Stoics pick up on this cosmic irony (see Porter 2020: 238–40), but scholars of Heraclitus do not. See below.

should be reluctant to render with “soul,” for reasons that will emerge). I quoted this fragment earlier, but it is worth presenting once more here:

ψυχῆισιν θάνατος ὕδωρ γενέσθαι, ὕδατι δὲ θάνατος γῆν γενέσθαι, ἐκ γῆς δὲ ὕδωρ γίνεται, ἐξ ὕδατος δὲ ψυχή. (B36)

For *psuchai* it is death to become water, for water it is death to become earth; from earth water comes to be, and from water, *psuchē*. (KRS 229)

The other two fragments attribute a similar cyclical and regenerative mechanism to fire:

πυρὸς τροπαὶ πρῶτον θάλασσα, θαλάσσης δὲ τὸ μὲν ἥμισυ γῆ, τὸ δὲ ἥμισυ πρηστήρ. <γῆ> θάλασσα διαχέεται, καὶ μετρέεται εἰς τὸν αὐτὸν λόγον, ὁκοῖος πρόσθεν ἦν ἢ γενέσθαι γῆ. (B31)

Fire’s turnings: first sea, and of sea the half is earth, the half “burner” [i.e., lightning or fire] . . . <earth> is dispersed as sea and is measured so as to form the same amount<sup>33</sup> as existed before it became earth. (KRS 218; trans. modified)

πυρὸς τε ἀνταμοιβὴ τὰ πάντα καὶ πῦρ ἀπάντων ὅκωσπερ χρυσοῦ χρήματα καὶ χρημάτων χρυσός. (B90)

All things are an exchange for fire and fire for all things, as goods are for gold and gold for goods. (KRS 219; trans. slightly modified)

The idea of “turnings” has been understood as a reference to summer and winter solstices, when the sun’s proximity to the earth is at its two farthest extremes, but a more general process of natural change may be intended.<sup>34</sup> These two interpretations need not be mutually exclusive, the more so if the ultimate reference is the joining of contraries and the logic of backward-turning fitting-together (on which see below), for which the solstice image, if that is what it is, could be emblematic. For Heraclitus, the world’s constituent physical biomasses cycle in an endless pattern of change and exchange. Fire plays a prominent role in this life cycle.

33. Adopting “amount” from Kahn XXXIX in place of “proportion” (KRS), an interpretation anticipated by Reinhardt 1942a, who rejects the idea of proportionality (see esp. 11n. and 15–16). Kahn prints a different text (without <γῆ>) and translates, “Sea pours out <from earth>, and it measures up to the same amount it was before becoming earth.” The Greek is troubled and variously edited, but this should not affect the gist of my interpretation.

34. For the solstice theory, see Snell 1926: 359n.1; Kahn 1979: 140; and Finkelberg 2017: 49. For the more general theory, see Reinhardt 1942a: 15 and Jones 1972.

In antiquity, fire was thought to be Heraclitus' chief contribution to the early theory of the physical elements.<sup>35</sup> He equates fire with God and intelligence in several places (e.g., A10, B64, B66, B67 (reading <πῦρ>), B90, B94, B100, B118, D97),<sup>36</sup> which has led scholars ancient and modern to assume that fire for Heraclitus is “the primary cosmic constituent” and “the archetypal form of matter.”<sup>37</sup> In *On the Soul*, Aristotle treats Heraclitean *psuchē* as the *archē* (the principle “element”) and connects it to “[warm] exhalation (ἀναθυμίασις)” (*De an.* 1.2, 405a25–26 = A15a). Recent scholarship follows Aristotle in considering Heraclitus' innovation to be his insertion of *psuchē* into the life cycle of nature as though it were one of the primordial stuffs among others (albeit most proximate to fire), and then in his characterization of the life cycle as a movement between life and death.<sup>38</sup>

Heraclitus does award an apparent preeminence to fire. But water enjoys a prominence of its own. Water is not simply ubiquitous in the fragments. It has a rightful place in the Heraclitean cosmos, which ebbs and flows and enjoys a kind of flux—the flux of material change. The flow of cosmic matter in this sense is amply attested (A6, D65d, D66, R23, R29, R36, etc.). As Diogenes Laertius notes, “the totality of all things flows like a river” (καὶ ρεῖν τὰ ὅλα ποταμοῦ δίκην, Diog. Laert. 9.8 = A1.8 = R46b). Aristotle knows this too: “They [earlier Greek philosophers] say that everything is becoming and flows (πάντα γίνεσθαι φασι καὶ ρεῖν)” (*Cael.* 3.1, 298b29–30), and he goes on to name Heraclitus in the next clause. Then there are the famous river fragments (B12, B49a, B91), which were understood in antiquity as images of cosmic flux and were among his best-remembered sayings. Today they are among his most contested fragments. Of these, only B12 is in some quarters thought to be genuine, the others being no more than rephrasings by later authors.<sup>39</sup> And yet, B12, too, comes to us packaged together with cosmic significance: its context and its possible continuation speak of elemental vapors and of a process that suggests either the generation or the regeneration of *psuchai*. (We will want to revisit this fragment below.)

If this is correct, then we have evidence of one more tension running through Heraclitus' view of nature, though it is one that has not received sufficient press—namely, that between the two cosmic materials of fire and water, which are by far

35. Cf. Arist. *Metaph.* 1.3, 984a7–8. See n.37 below.

36. Add to this the testimonia about stars: A15 = R48c (Macrobius), D91b, D95.

37. Kirk, Raven, and Schofield 1983: 188, 198. Cf. Diog. Laert. 9.7 = A1: ἐδόκει δὲ αὐτῶι καθολικῶς μὲν τάδε· ἐκ πυρὸς τὰ πάντα συνεστάναι καὶ εἰς τοῦτο ἀναλύεσθαι; A5 (Simplicius *ap.* Theophrastus): πῦρ ἐποίησαν τὴν ἀρχήν, καὶ ἐκ πυρὸς ποιοῦσι τὰ ὄντα πυκνώσει καὶ μαιώσει καὶ διαλύουσι πάλιν εἰς πῦρ, ὡς ταύτης μιᾶς οὐσης φύσεως τῆς ὑποκειμένης; Lucr. 1.637.

38. For “soul stuff,” see English 1913; Vlastos 1955: 363–64; cf. 358: “world-masses,” but excluding *psuchē* from these; Mansfeld 1967: 20. Betegh 2013 is the most developed version of this thesis.

39. Most recently, Graham 2006: 117n.20: “B49a, B91a, Plato *Crat.* 402a, etc., are all [later] echoes of B12.” Other scholars do not share this view (e.g., Vlastos 1955, Tarán 2001, and, seemingly, Finkelberg 2017: 113–14, 154–58), and neither do I.



the most salient items in Heraclitus' imagery. But as the testimonia just quoted demonstrate, fire and water are collaborative and not simply opposed. Each is equally basic to the universe and its generative processes. And for the same reason, those processes and their constituents, fire and water, are in fact continuous, as I will attempt to show in a moment. In any case, assigning priority to the one over the other looks to be unwarranted.<sup>40</sup> Antiquity, for the most part, seems to agree.

In the same report (A1.8), Diogenes Laertius has no trouble speaking about fire and water in (more or less) the same breath: "Fire is the element (πῦρ εἶναι στοιχείου), and all things are an exchange of fire . . . and the totality of all things flows like a river." He was anticipated by Aristotle, who understands the behavior of fire in terms of its water-like properties:

τὸ δὲ πῦρ ἀεὶ διατελεῖ γινόμενον καὶ ῥέον ὥσπερ ποταμός, ἀλλὰ λαιθάνει διὰ τὸ τάχος.

Arist. *Parv. nat.* 470a3–5

Fire ever continues coming to be and flowing like a river, but this escapes us because of its rapid changes.<sup>41</sup>

Elsewhere, Aristotle continues to think of fire as a continuous fluctuation of water and heat, a fact that is visible in fire's incipient and most unstable form, the individual flame:

ἡ μὲν γὰρ φλόξ διὰ συνεχούς ὑγροῦ καὶ ξηροῦ μεταβαλλόντων γίγνεται καὶ οὐ τρέφεται (οὐ γὰρ ἡ αὐτὴ οὕσα διαμένει οὐδένα χρόνον ὡς εἶπεῖν).

Arist. *Meteor.* 2.2, 355a9–11

A flame is in a process of becoming, involving a constant interchange of moist and dry. It cannot be said to be nourished [or "congealed"?] since it scarcely persists as one and the same for a moment.<sup>42</sup>

Perhaps Aristotle was encouraged by the image in his mind of a flickering flame, an image that most likely will have originated in Heraclitus,<sup>43</sup> or by another

40. After assigning preeminence to fire, Kirk corrects the record: "Regarded as a part of the cosmos, fire is on a par with sea (presumably representing water in general, as in Xenophanes)" (Kirk, Raven, and Schofield 1983: 198; emphasis in original).

41. Trans. Graham 2006: 140–41. Kahn 1979: 166 points to Arist. *Meteor.* 1.9, 346b35–347a3, which does indeed seem to borrow Heraclitean language (e.g., B36 and B12) to describe the cycle of nature as it passes from water to air via exhalation. Aristotle compares this cycle to "a river flowing in a circle up and down, common to air and to water," and Kahn 1979: 166 likens it to a "cosmic river." Similarly, *Meteor.* 2.3, 357b32: τὸ τῶν ῥέοντων ὑδάτων καὶ τὸ τῆς φλογὸς ῥεῦμα.

42. Trans. Webster, rev. Barnes in Barnes 1984.

43. D97 (Seneca): "Heraclitus thinks that a lightning flash is like what we see when a fire is trying to get going, like the first, unsteady flame (*flammas incertam*), alternately dying down and flaring up again (*modo intereuntem, modo resurgentem*)" (trans. Hine). Aristotle appears to have Heraclitus in



fragment of Heraclitus (B30) in which fire is seen as a substance that kindles into life and sputters out again in an everlasting rhythmic pattern (ἀπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα). Lambent and wavering, all “shortage and surfeit” (B65), fire kindles and extinguishes itself, burning up and burning out, and no more the one than the other—not in equal measures but just in unspecified quantities—which ensures that fire is permanently defined by its extremes. Fire lives through these changes (it is “ever living,” ἀείζων), though even this phrasing misleads. The life of fire just *is* one of change. *There is no entity that persists through these changes*: fire is the burning up and out; it is a verb (an action) and not a noun (a substance). Hegel would later look at Heraclitean fire in nearly identical terms: “Fire is this absolute unquiet (*Unruhe*), the absolute dissolution of what exists—the passing away [or “perishing,” *das Vergehen*] of other things, but also of itself; it lacks permanence.”<sup>44</sup> But then, the same is true of water.

(ii) RIVERS

Water does not simply flow in Heraclitus. It comes in waves. Consider B12:

ποταμοῖσι τοῖσιν αὐτοῖσιν ἐμβαίνουσιν ἕτερα καὶ ἕτερα ὕδατα ἐπιρρεῖ·  
Ar. Did. fr. 39.2 Diels = B12

Upon those that step into the same rivers different and different waters flow. (KRS 214).

The language is poetic and rhythmic, reiterative and redundant, both phonically and semantically. The repetition in “different and different” might be understood to signify constant regularity,<sup>45</sup> but it can as easily signify just what it says: the production of constant *difference*, with no suggestion of a regulated flow of oncoming waters.<sup>46</sup> Likewise, eternal fire may be “kindling and going out in measures

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mind in the *Meteorology* passage. He mentions exhalation, the feeding of moisture, the solstices, and the sun in the same context and immediately names Heraclitus in the sequel.

44. Hegel 1971: 330. Fire for Hegel is thus a principle of motion and unquiet, while the universe undergoes a “continual burning” (*dies beständige Verbrennen*), but not periodic conflagrations (333). It is important to recognize that fire has two faces: it is both productive (B31a, B64, B90) and destructive (B43, B66, A1.8 and R62–63; B64 hints at both qualities—see Bollack and Wismann 1972: 214–15 for a subtle account), and subject to the same vicissitudes as any other constituent of nature (B30, B88, D95, D97). It is conceivable that Heraclitus’ theory of evaporation was later construed as periodic conflagration (*ekpurōsis*) by Aristotle and Theophrastus, and that this was further made into a drastic theory of world destruction by the Stoics and by Christian eschatologists in their wake (on whom see Reinhardt 1942a). But at bottom lay Heraclitus’ view that generation and destruction work hand in hand, as in the process of evaporation: the death of one thing is the life of another; fire’s extinguishment is its “death.” See n.52 below.

45. So Kirk 1951: 36–37 and 1962: 377–78.

46. Tarán 2001: 147 rejects the regularity thesis put forward by Kirk. Kirk’s argument that the waders “provide the fixed point against which the regularity of the passage of water can alone be

(μέτρα)” (B30), but there is no implication that these are equal measures. The point is that fire is constantly burning and being extinguished in unspecified quantities (“in bits,” as Catherine Osborne puts this).<sup>47</sup>

This is just one of the interpretive cruxes of the river fragments, but it also plays into another. If the waters are constantly undergoing change, in what sense do the rivers, or even those who wade into them, remain “the same”? The syntactical ambiguity of τοῖσι ἀυτοῖσι in B12 invites the question. Should the phrase be construed with the rivers or the waders or both? Recent scholarship on Heraclitus insists that the rivers remain self-identical even if the waters that flow through them do not: his commitment to formal and structural integrity must be preserved at all costs, and not only in this case but in all others.<sup>48</sup> Scholars are thus inclined to reject as a witticism the quip by Cratylus that it is impossible “to step into the same river even once.”<sup>49</sup> The remark is reported by Aristotle as a correction and criticism of Heraclitus and is taken at face value by Plutarch. But Cratylus is sharpening Heraclitus’ original point, not betraying it: the river is not the same at any time, and neither, technically, are we.<sup>50</sup> To be sure, like rivers, we have a metastable identity, or just the intuition of one. But that is not the same as possessing metaphysical or actual (physical) identity.<sup>51</sup>

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measured” (Kirk 1962: 378) is circular, as it assumes (i) a fixed point (a speculation on his part if the waders are also changing) and (ii) the requirement of fixed (regular) measures that Kirk wants to prove. See further next note.

47. Osborne 2004: 90: “igniting in bits and going out in bits.” μέτρα do not measure equal quantities; they establish equipollents that condition the quality of being opposed, if not quite opposite. Take water. Water that turns briny by some amount in one part of the cosmos is not compensated by an increase of sweet water in another part of the cosmos; the two kinds of water are opposites in some contexts but not in others (B61), and not all opposites operate according to physical exchanges (e.g., the road up or down). Nor does μεταπεσόυτα in B88 “impl[y] a regular exchange” (Kirk 1951: 37). I agree here with Emlyn-Jones 1976: 112n.100, who rejects Kirk’s view and the general notion of regularity of exchange in the case of opposites. “Contrasts” is often more useful than “opposites.” See below.

48. See, for example, Kahn 1979, 168: “What is emphasized is that the structure and hence the identity of a given river remains fixed,” despite the river’s changes. “Taken generally,” he continues, the river fragment exemplifies the cosmic law that guarantees “the preservation of structure within a process of flux, where[by] a unitary form is maintained while its material embodiment . . . is constantly lost and replaced.” The literature devoted to the river fragments is immense. Recent treatments include Tarán 2001, Colvin 2005, and Graham 2006. I will have more to say below about the structuralist and unitarian impulse in scholarship on Heraclitus. On the river/waters distinction, see n.58 below.

49. Arist. *Metaph.* 3, 1010a13–15; B91a (Plut.).

50. Vlastos 1955: 339–40 defends B91a (“one cannot step into the same river twice”) as the original context for Cratylus’ witticism.

51. Graham 2006: 134 reads more into Heraclitus’ river fragment than it permits when he claims that “[a]s the river is, in a certain sense, constituted precisely by the changing waters, so the traveler is the same precisely in virtue of encountering the changing streams” and his “changing environment”: he “is being constituted as the same subject.” There is nothing in Heraclitus to support this idea or the further notion that “our unitary reaction to outside stimuli . . . makes us who we are” (viz., “stable beings”). Quite the contrary. For Heraclitus, the boundary between physical entities and their environment is never firm or fixed.

Plato appears to have grasped this point and to have adapted it for his own use (Diotima is speaking):

“Even while each living thing is said to be alive and to be the same—as a person is said to be the same from childhood till he turns into an old man—even then he never consists of the same things, though he is called the same, but he is always being renewed and in other respects passing away, in his hair and flesh and bones and blood and his entire body. And it’s not just in his body, but in his soul, too, for none of his manners, customs, opinions, desires, pleasures, pains, or fears ever remains the same, but some are coming to be in him while others are passing away. . . . By this device, Socrates,” she said, “what is mortal shares in immortality (θνητὸν ἀθανασίας μετέχει).”<sup>52</sup>

Heraclitus would add in turn, “and what is immortal shares in mortality.”

Some editors propose that the sentence in B12 is completed by B91b, which is reported by Plutarch immediately after he repeats the quip by Cratylus (B91a):

ἀλλ’ ὀξύτητι καὶ τάχει μεταβολῆς “σκίδνησι καὶ πάλιν συναγει” (μᾶλλον δὲ οὐδὲ πάλιν οὐδ’ ὕστερον, ἀλλ’ ἅμα “συνίσταται καὶ ἀπολείπει”) “καὶ πρόσεισι καὶ ἄπεισι.”

Plut. *De E ap. Delph.* 392B = B91b

But owing to the suddenness and swiftness of change “they [sc., the rivers] scatter and gather together again”—or better yet, not again and not at a later time, but rather “they come together and flow away” at one and the same time [i.e., in both directions at once]—“and they approach and depart.” (KRS 214; trans. modified)

Kirk, Raven, and Schofield follow Diels-Kranz in guessing which parts of the sentence represent Heraclitus’ original phrasing, and then go on to attribute one more bit of the Greek to the original: συνίσταται καὶ ἀπολείπει.<sup>53</sup> This last could be a paraphrase by Plutarch, that is, a repackaging of σκίδνησι καὶ πάλιν συναγει. Neither

52. Pl. *Symp.* 207d–208b; trans. Nehamas and Woodruff. The passage is quoted by Kahn 1979: 167 as a parallel to the river fragment. In the sequel to B91b (*De E ap. Delph.* 392C–E), Plutarch draws the same conclusion as Diotima, and he even uses some of the same examples (children growing into adults). Personal identity, he reasons, is elusive owing to the constancy of change that overtakes the self: linguistic and perceptual habits notwithstanding, “no one remains one person, nor even *is* one person, but we become *many* persons” (μένει δ’ οὐδεις οὐδ’ ἔστιν εἷς, ἀλλὰ γινόμεθα πολλοί) over the course of our existence (392D). And in a striking echo of Heraclitus, Plutarch writes that “we die many deaths and are dying even now” (ἤδη τοσοῦτους τεθνηκότες καὶ θνήσκοντες, 392C), and then quotes B76b as proof: “The death of fire is birth for air and the death of air is birth for water” (XLI). The authenticity of this last fragment is widely impugned, but its logic need not be. Rephrased, B76b produces an echo of B62: “Air lives the death of fire, water lives the death of air, fire dies the life of air, air dies the life of water.”

53. See Kirk 1962: 383 for an earlier defense of the phrase.

verb (συνίστασθαι, ἀπολείπειν) appears in the extant fragments of Heraclitus. On the other hand, both verbs are attested in archaic Greek (including Presocratic writers), and if the two other pairs are genuinely Heraclitean, the third repetition has point: it mimics the repetitive and rhythmic flow of the waters, as in ἔτερα καὶ ἔτερα ὕδατα ἐπιρρεῖ in B12. The more interesting question is what to make of the parenthesis, οὐδὲ πάλιν οὐδ' ὕστερον, ἀλλ' ἕμα (“not again and not at a later time, but at one and the same time”), which Plutarch uses to gloss the word πάλιν (“again”) in Heraclitus’ original wording. And here Plutarch is on to something important.

The idea that the process of gathering and dispersing is not sequential but simultaneous is, I believe, an accurate reflection of Heraclitus’ thought, both in B91b and elsewhere.<sup>54</sup> Scholars of Heraclitus are resistant to the nonlinear logic of simultaneity, which remains underleveraged even where it is recognized to be a facet of his thinking, chiefly because they prefer to look for an underlying stability in Heraclitean nature.<sup>55</sup> The image of water flowing together and apart need not imply regularity (equal measures), nor need it imply an equilibrium that is being achieved or restored. All that is being indicated by Heraclitus is that coming-together and flowing-away are simultaneous actions, not unlike the way a bow is pulled or bent forward in one direction and back in another direction at one and the same time (it is πάλιντροπος), or, what is perhaps even more apt, because here there can be no question of equipoise or equilibrium, the way a bow and a lyre are and are not similar, the way life is and is not death, the way the road up is and is not the road down, the way a river is and is not its waters, or the way mortals are and are not immortal. Heraclitus’ focus, in other words, is on dynamic tensions and not on any equilibrium that may or may not result from the tension. Flattening the tensions between contraries by reducing the latter to aspectual or perceptual differences measured against what is assumed to be a stable (if unapparent) reality is another

54. See Kirk 1962: 381 on B91b. For a parallel case, see Plut. *Comm. not.* 1084F–1085A, a passage concerning the life cycle of the *psuchē*, which was associated with flowing rivers and with Heraclitus’ river fragments by the Stoics. Plutarch’s verbs recall the passage above: οὐσίας ὀλισθηρᾶς καὶ σκεδαστῆς καὶ φερομένης ἀεὶ καὶ ῥεούσης [sc., τῆς ψυχῆς] (1085A). See Colvin 2005: 269 on the polemical context.

55. Simultaneities are accepted in some of the scholarship, but often only at the cost of taking refuge in equilibrium, harmony, balance, and unity. See, e.g., Rohde 1910: 149 (“gleichzeitig”); Reinhardt 1916: 195 (“nicht wechselnd, sondern gleichzeitig”); 1942a: 14–15; 1942b: 244 (“das große Himmelsfeuer selbst erlischt, indem es sich entzündet”); Vlastos 1955: 358; Jones 1972; Emllyn-Jones 1976: 93–94 and passim; Kahn 1979: 150; Kirk, Raven, and Schofield 1983: 199–200; Hölscher 1985: 19–20 (resolving every “Simultanbestimmung” in a reassuring “Einheit aller Gegensätze”); and Dilcher 1995: 57. If simultaneity in B91b is correct, then we are entitled to read B88 (τὰδε γὰρ μεταπεσόντα ἐκεῖνά ἐστι κάκεῖνα πάλιν μεταπεσόντα ταῦτα) in the same spirit, though Kirk 1962: 382 and Emllyn-Jones 1976: 92–95 do not. πάλιν, then, is an index of reflexive transitivity (more than of reversibility), and not of sequential change. The logic of B88 is identical to that of B62 (“mortals immortals”), where simultaneities are likewise at work: what is mortal is *at the very same time* immortal.

unsatisfactory exit strategy.<sup>56</sup> There is no reason why the countless tensions that run through the Heraclitean universe should produce stabilities, and many more reasons why they should not. (The threat of stasis is one.) Dynamic instability is not chaos, nor does it entail radical flux in the sense that Plato and Aristotle feared.<sup>57</sup> This instability, manifest in every phenomenon, is rooted in the very logic of the universe, which is eternally in motion and restless, and not simply on its surfaces (those we can see) but all the way down (at levels below the threshold of perception).

A common assumption in the scholarship on Heraclitus is that constancy of change is predicated on a constant and equal exchange of materials. Nature is thus thought to be a proportionally stable entity, and thus the even distribution of exchanges in the universe guarantees identities throughout. But this is no more than an assumption. Nowhere in Heraclitus do we find support for the notion of a safe return to any *status quo ante*.<sup>58</sup> There is no total sum of “measures” in the world that remains stable as things in the world change,<sup>59</sup> and there are no stable identities to be found in Heraclitus’ view of nature, only metastable identities that in the end are not even identical to themselves. To be sure, like rivers, we have a metastable identity. But this misses the deeper thrust of Heraclitus’ reasoning.

A third river fragment drives home the same argument, with direct implications for the presumed coherence of the human self (B49a):

ποταμοῖς τοῖς αὐτοῖς ἐμβαίνομέν τε καὶ οὐκ ἐμβαίνομεν, εἶμέν τε καὶ οὐκ εἶμεν.

We step and do not step into the same rivers, we are and we are not.<sup>60</sup>

56. Cf. Kirk, Raven, and Schofield 1983: 189: “different aspects of the same thing may justify opposite descriptions.” Similarly, Moravcsik 1991 (proposing an appearance/reality distinction); Dilcher 1995: 124–125; and Osborne 2004: 84 and 91. A version of this approach goes back to Zeller; see Kahn 1979: 147 (“Excursus I”): all contrasts can be explained away “as transitory appearances of a single entity.” Such readings seek to make Heraclitus more palatable, but they do so at the cost of making him a less challenging thinker.

57. See n.103 below.

58. Contrast Kahn 1979: 144, who insists on the way “measure [is] preserved over a sequence of stages, in a temporal progression that returns us to the *status quo ante*. The measures of equality are thus rigorously respected over the long run, no matter how dramatic the reversals may be at any given moment.” The application of such a rule to the rushing waters of rivers makes little sense. One could ask how it happens that a stretch of river (a “river reach” as hydrologists today call it) is replenished so as to appear equally full at all times. In point of fact, this measure is anything but stable over any length of time, and the apparent equilibrium, even if dynamic, is subject to countless contingencies, including geomorphic ones, that undermine its apparent stability, as Heraclitus and his first readers would have known. See Leopold 1994, a hydrologist, who writes, “There is no clearly expressed philosophy covering the factors that govern alteration, adjustment, and establishment of a quasi-equilibrium state in river morphology” (33). My point is that Heraclitus would *not* have turned to rivers to establish a philosophy of equilibrating states. Quite the contrary. Rivers are places of dynamic and unpredictable change, “indeterminacy” (40), and impermanence. He draws attention to rivers precisely to *destabilize* our beliefs in natural continuities.

59. Pace Kirk 1951: 41 and others. See n. 66 (ad fin.) below.

60. For a defense of the authenticity of this fragment, see Vlastos 1955: 341–42. It was earlier accepted by Reinhardt 1916: 62, 209; 1942a: 19n. Vlastos 1955: 343n.14 further defends the obvious

If we do not step into the same rivers (even once), it is not only because we and the rivers have no durable identity from one moment to the next, but because we and the rivers have no essential identity. All that appears to stay the same about a river, or about any entity mentioned in the fragments, is its name. And yet, not even that is a guarantor of identity for Heraclitus, who is deeply mistrustful of the cohesive power of names.<sup>61</sup> You don't need a philosopher to remind you of this truth. Just ask any farmer, geographer, or geomorphologist who has witnessed a river change course, produce an oxbow, or dry up. And the same is true of ourselves. Like rivers, we are in a ceaseless state of becoming and never "are."<sup>62</sup> In life and in death we participate in nature's cycles by being made of otherness in our material composition and by continually becoming other than we are. "We are and we are not," just as rivers are and are not.

(iii) *PSUCHAI AND STUFFS*

Although water is never directly assigned intelligent properties the way fire is in Heraclitus' writings, the continuities between the two are undeniable, as in the testimonium to which we owe our knowledge of the river fragment B12:

Concerning *psuchē*, Cleanthes, citing the doctrines of Zeno in order to establish a comparison with the other philosophers of nature, says that Zeno defines *psuchē* as an evaporation endowed with sensation (αἰσθητικὴν ἀναθυμίασιν), like Heraclitus; for, wanting to show that the *psuchai* that come from an evaporation are always intelligent (νοεραὶ αἰεὶ γίνονται), he has compared them to rivers, when he says, [B12]. And *psuchai* come out of moisture as exhalations (καὶ ψυχὰὶ δὲ ἀπὸ τῶν ὑγρῶν ἀναθυμιῶνται). Thus, Zeno affirms, like Heraclitus, that *psuchē* is an evaporation and that it is endowed with sensation.

Ar. Did. fr. 39.2 Diels = R51; trans. modified

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point, which was evident to Cleanthes (*SVF* 1.141) and Seneca (*Ep.* 58.22: *corpora nostra rapiuntur fluminum more. . . ego ipse, dum loquor mutari ista, mutatus sum*), that the bathers are themselves undergoing change in their persons. Indeed, they understood the fragment to be *about* change in personal identity, which is predicated in turn on universal (physical) change.

61. See B23, B32, B48, and B67. Though Heraclitus invites the distinction between waters and rivers in B12 (Reinhardt 1916: 177: "das Wasser fließt vorüber, aber der Fluß bleibt stets derselbe"), he also erodes it: a river is nothing more than a placeholder for the waters that "it" contains in name only. To appeal to the stability of the river *bank* to shore up the identity of the river itself, as Bollack and Wismann 1972: 269 and Moravcsik 1991: 564 do, flies in the face of Heraclitus' arguments that earth is constantly changing, and nowhere more so than when it is in contact with water, which results in a mutual transformation of both materials (as Bollack and Wismann 1972: 174 [§3.2] seem to suggest). In anachronistic terms, these changes include erosion, deposition, and the particulate matter that enters into water (sediment load). No doubt, it is the absence of any (provisional) stabilizing guardrails such as riverbanks or the fixed ontological character of the self in B91a that threatens the fragment's claim to authenticity. But that is only a scholarly prejudice against change without stability. Against this, the minimal requirement of change is not the background notion of stability (the idea that change can only be measured against what is unchanging), but that of contrast, which is an unstable measure of anything.

62. Cf. Guthrie 1974: 211–12; Sider 1989: 366; Tarán 2001: 165–67.



This is a complex testimony. On the one hand, Zeno and Cleanthes could be Stoicizing Heraclitus (this is the broad consensus view). But on the other hand, they could simply be acting as reliable witnesses to their common forebear, with whom they felt a strong affinity. What is more, their view aligns with Aristotle's testimony that Heraclitean *psuchai* are exhalations (*De an.* 1.2, 405a25–26). Gábor Betegh has recently offered a vigorous and I think convincing defense of the second possibility.<sup>63</sup> At the same time, Betegh follows the consensus view in privileging *psuchē* over earth and water and in attributing to it a tighter link to intelligence, divinity, and fire than other physical masses enjoy.<sup>64</sup> I am more interested in the opposite relationship, that of *psuchē* to water, from which *psuchē* is born. Though divinity and intelligence are never explicitly assigned to water as an attribute, there are good reasons not to deny this feature to any physical member of the Heraclitean cosmos. My thinking runs as follows.

Intelligence, whatever it is, must be a property of nature as a whole: it resides immanently in the logic that governs its actions.<sup>65</sup> As in the Stoics, the intelligence of the cosmos knows no boundaries; it is equally dispersed among all the physical constituents and their processes, though a better way of framing this is to say that such intelligence just *is* those processes themselves: it is their *logos* or logic, or better yet, their *ecology*. And it is to that *logos* that Heraclitus urges his readers

63. Betegh 2013. Mansfeld 1967 anticipates some of this argument. Mansfeld defends the authenticity of ἀαθημιῶνται in B12 (15n.3), which he reads partly as a cosmic process and partly as a psychological one, a point on which Betegh wavers as well. (See below.)

64. Vlastos 1955: 361 and 363 briefly wonders why water or earth are not “on a par” with fire (362), but then adopts the conventional privileging of fire and *psuchē*. The same assumption leads Vlastos to assume that fire makes “a better *symbol* of permanence” (361n.49; emphasis in original), a conclusion that ignores fire's mutability (its intermittence and impermanence), which is obvious enough, but see Kirk 1949: 390 on “the τροπή to water from which no fire is exempt,” and 391 on sleep as a temporary “extinction” of fire in the human *psuchē*. Rivers, meanwhile, are “symbols of change” (Vlastos 1955: 343). Why not accord the same status to fire and recognize in it a symbol of change? We should. But we should also recognize that no symbol in Heraclitus, no image with emblematic force (and there are several: the bow, the lyre, the road, the river, *harmonīē*, god, and so forth), has unimpeachable priority or preeminence over any other. The very plurality of images that vie for attention and sometimes for preeminence in Heraclitus' writings is part of what makes his oeuvre as multivalent and undecidable as it is.

65. Cf. B113: “Thinking is shared in common by all things” (ξύνον ἐστι πᾶσιν τὸ φρονέειν), including, of course, fire. See Kahn 1979: 119 for a similar argument, likewise construing πᾶσιν as a neuter plural. Further, B72: “the *logos* that manages all things” (ὅι . . . λόγῳ τῶι τὰ ὅλα διοικοῦντι), which has a Stoic flavor (it is found in Marcus Aurelius) but may be genuinely Heraclitean, though it is sometimes taken to be spurious (Finkelberg 2017: 106–107). In the case of B72, I understand διοικοῦντι to be equivalent to “immanently guiding,” without reference to some notional agent such as divine fire (Finkelberg 2017: 107), for reasons that will emerge below. Betegh 2013: 233 accepts the idea of cosmically distributed intelligence: “stuff . . . does not need to be in a human, or animal, body to show mental functions.” But as I hope to show, the intelligence of nature is not comparable to a mental function, nor is it rational. Rather, it is a truly distributed intelligence whose IQ resides in its network of relations and processes that make up the cosmos. Being radically external to any individual entities, it is, for the same reason, not panpsychic but is, instead, ecological. See Porter 2022: 15–23 (“The Extroversion of the Human and the Ecology of the Self in Heraclitus”)



to attend at the opening of his book: “listening not to me but to the *logos*” (οὐκ ἔμοῦ, ἀλλὰ τοῦ λόγου ἀκούσαντας, B50).<sup>66</sup> Just as natural processes cannot be abstracted from their physical constituents (the elemental masses in and through which they work), and just as nature’s intelligence cannot be abstracted from its processes, so too no constituent of nature can be privileged over any other: all are equally natural and are equally “intelligent” insofar as they participate in the intelligence of the whole, which ought to be identified not with any one of its constituents (such as fire) or aspects (life or death) but with their regulative principle, however we define that. The best candidate, or at least the most evocative, is “the back-turned *harmonīē*,” as I argue below.<sup>67</sup>

66. Is the logic of the universe captured by its *logos*, that is, by the word *logos*? Perhaps, though my interest is in the logic of nature rather than its transcription as “*logos*.” The meaning and translation of *logos* in Heraclitus are highly contested. The most common formulations run from “account,” “rationality,” “proportion,” to “structure” or “system.” See Verdenius 1966 and Johnstone 2015 for useful reviews of the literature. They both add a further meaning: for them, *logos* represents in language the way the world presents itself to us, whether or not we recognize this fact. I am not convinced that “cosmic self-revelation” is a helpful notion, certainly not if by this we understand “the world’s constant, common presentation of itself to us as an ordered and intelligible whole” (Johnstone 2015: 21; cf. Verdenius 1966: 95: “die Weltordnung muss also eine sprechende Ordnung sein”; 98: “offenbaren”; identically, Schuster 1872: 19, hymning “die Offenbarung, welche die Natur uns bietet in vernehmlicher Rede”). This seems garbled: the *logos* of the world may be ξινός (“common”), but there is no “one common way in which all things present themselves” (Johnstone 2015: 21); order and intelligibility are what we look for, not what we find; these are human-centric terms but nature is not human-centric; and so on. For this reason, I cannot agree with Bollack 1997, who, running to the opposite extreme, reduces Heraclitus’ *logos* to the “universe of [human] signification” (299) and its inner workings or failings (308: “*méconnaissance*”), with no pretensions to any reference to the external world or to nature; reference to all “*extériorité*” is in fact a priori excluded on this model (299, 306). It may be that the first meaning of *logos* in B50 is the reasoning or argument that informs Heraclitus’ own account while the word’s second meaning has to do with the *logos* that governs the world of nature. To a degree, these coincide, though it is more accurate to say that Heraclitus’ *logos* points to the *logos* of nature through the very form—the dialectical twists and turns—of his sentences. Nature is not reducible to propositional statements. It merely gives “signs” of itself, like the Delphic oracle: οὔτε λέγει οὔτε κρύπτει ἀλλὰ σημαίνει (B93). Heraclitus’s book follows suit. For the same reasons, I prefer “logic” to the formulations noted above, and especially to “the structure of the world itself” (Kahn 1979: 98) and “conception of the world order as a meaningful language” (130), since for Kahn and others “structure” implies an underlying stability and unity of the world, whereas Heraclitean nature, as I read it, is irreducible to such ontologically stable things. We could say that Heraclitus’ universe is more *infrastructural* than structural (see Peters 2015 for the term). As Dilcher 1995: 44 says, *logos* is “not itself a thing.” It is also not exactly “the reason inherent in things” (*pace* Dilcher 1995: 38 and others; differently, Bollack and Wismann 1972; see next note). It is the form that the processes of nature take: it is their dynamic logic, and it exceeds every rational accounting, because they represent not only relations but, more specifically, “an infinite regression of relationships” (Gregory Bateson, quoted in Star 1999: 379). Cf. R13 (Simplicius), rejecting the idea that Heraclitus’ world (κόσμος) is structured (a διακόσμησις); it is rather the pattern (a διάταξις) of changes that do not merely run through nature but that actually *change the shape of nature* as they do (ἡ μεταβολή τοῦ παντός). In other words, the whole is a changing entity, not a container for changing things. And there is no one fixed pattern in nature but only a procession of patternings.

67. I fully agree with Bollack and Wismann 1972: 230: “la raison est la chose du monde la plus quotidienne, bien que la plus ignorée,” and it represents, at bottom, “[la] *raison des contraires*” (emphasis in original).

B62, once again, is a good guide. Life cannot be privileged over death, for there is no way to abstract the one from the other. They do not exist in isolation, first because they are not opposites that exist in absolute polarity but are instead *relata*, and second because they are mutually constitutive, and inextricably so. This is what the phrases “living the death” and “dying the life” amount to. Because nothing in the universe can completely perish, and because perishing is part of the process of living, there is no way to determine where life ends and death begins or where death ends and life begins. Whatever differences may exist between these processes, those differences are erased in the larger scheme of things. Dying is as much a manifestation of nature’s logic and its “intelligence” as living is. To privilege life over death would be to reject that logic. Nothing, then, that happens in the world is an unintelligent process. And so, as difficult as it may be for us to imagine, Heraclitus in B36 (see p. 61 above) is asking us to consider how there is something intelligent about water’s seemingly fatal effects on *psuchē*. What appears dire in one respect, or simply to us in our attachment to life (with *psuchē* understood as the principle of life) and to our presumed exceptional status in nature (as though our possessing *psuchē* were the defining feature of our existence),<sup>68</sup> is not dire when it is viewed from a larger perspective (from the viewpoint of nature).<sup>69</sup> Death even appears to be a goal that, as it were, impels biomasses to seek their own provisional end, as if joyously obeying a kind of death drive, or, in the less drastic-sounding language of Bollack and Wismann, giving way to “the temptation to return [to the moisture of water] and to die there.”<sup>70</sup>

B77 (Numenius *ap.* Porphyry) is a case in point, and it cannot be easily explained in any other way:

καὶ Ἡράκλειτον ψυχῆισι φάσαι τέρψιν μὴ [οἱ ἦ]<sup>71</sup> θάνατον ὑγρῆισι γενέσθαι.

Porph. *Antr.* 10 = CVIII

68. See Porter 2022 for arguments against human exceptionalism in Heraclitus. The present essay is extending that argument to counter the privileging of any single entity in Heraclitean nature.

69. There are, to be sure, indications that hot, dry *psuchai* are more intelligent than wet *psuchai*. B118 speaks of fire, dryness, and light, possibly on a cosmic level. The text is corrupt and appears in two main variants: “A gleam of light is the dry *psuchē*, wisest and best” (CIX) or “A dry *psuchē* is wisest and best” (KRS 230). See R101a–d for the variants and Kahn 1979: 245–48 for discussion. B117 speaks of an individual human *psuchē* whose cognitive capacities are blunted by inebriation (wetness). And there are the associations of fire with god and intelligence that were mentioned earlier. But fire, too, is as much an image of change and of extinction as any other entity in Heraclitus’ lexicon of images, on which see n.64 above.

70. Bollack and Wismann 1972: 236 (“les souffles secs qui s’évaporent de l’humide subissent la tentation d’y retourner et d’y mourir”; emphasis in original). Cf. 108–109: “la recherche de la mort”; 283 (apropos of B97): *psuchai* “se tournent dans l’excitation vers l’humide.” The death drive in Freud is not a drive to death but a motor, or accomplice, of life. See Porter 2005.

71. μὴ MS: ἦ Diels: καὶ Kranz.

Heraclitus says “it is delight, not [or: “or”] death, for *psuchai* to become moist.” (trans. Kahn)

Kahn and others would like to exclude this fragment as spurious, and one can see why.<sup>72</sup> Most scholars prefer to ignore its implications altogether.<sup>73</sup> The question is not whether becoming moist is or is not death for *psuchai*, but why *psuchai* take pleasure in approaching the moisture of water, which *is* a kind of death for *psuchai* (B36).<sup>74</sup> The same question can be asked about fire and its inconstancies: Why doesn't fire burn brightly all the time? What moves it to extinguish itself? The answer ought to be the same as in B77. All parts of nature delight in death, which is to say, the prospect of *more life*.

That Heraclitean nature should exhibit a kind of joyous death drive is less outrageous than we might think. Nature cannot change in any other way. But this raises a further problem. What is the cause of natural change? Why does life cycle at all? Why does nature *move* and not stay still? What is the source or cause of *its* motions? Only one or two discussions known to me even broach the question.<sup>75</sup> We take it for granted that change is natural to the Heraclitean world, but in doing so we also accept that change is a given that needs no further explanation. B77 and its context take us a bit further towards an answer.

In the fragment, Heraclitus attributes a motive force of desire to *psuchai*. But as B77 says, the desire is not exactly one for death, appearances notwithstanding: death is simply part of a larger life cycle. The point is further explained in the gloss on B77 by Numenius (or Porphyry), which may well reflect Heraclitus'

72. Kirk 1962: 340, Kahn 1979: 245, and Marcovich 1967: 267 reject the fragment.

73. Mansfeld 1967: 8–10 and Betegh 2013: 238 accept the fragment as genuine, as do Laks and Most 2016, the former two with the argument that *psuchai* do not perish when *wet* but only when they become *water*. I am not convinced by this reasoning, and neither was Numenius (or Porphyry), who cross-referenced B62 (with its mention of death) in the sequel. If the word *τέρψις* is genuine, i.e., Heraclitean (so Kahn 1979: 245, and those who accept the fragment), its role needs to be accounted for. Kirk 1962: 253 neatly disposes of *τέρψις* by excising it: he proposes the emendation, <τέρψιν ἤ> θάνατον, but ultimately rejects the fragment. A Neoplatonist would of course have a non-Heraclitean answer at the ready (e.g., Porph. *Antr.* 11–12). Empedocles, too, knows the fatal attractions of cosmic forces.

74. Cf. Mansfeld 1967: 10: death is the line “where pleasure ends” and to which it leads (15: “it partly dies”); Betegh 2013: 244: “The soul in becoming wet clearly approaches death, being on the way to water.” Of course, nothing literally dies in nature; it merely passes from one state to another. As Lucretius later says (2.753–54), change is death.

75. Kirk, Raven, and Schofield 1983: 199 try to locate motive force in the action of fire: “fire, we may conjecture on the basis of 218 [B31], was regarded by Heraclitus as the motive point of the cosmological processes.” But this leaves unmotivated the “turnings” of fire itself, its lambency, as revealed in B30 and B65. Cf. A1.10 = KRS 224, where the gradual turnings of celestial bodies, or the “bowls” in which they are seated, simply occur without motivation or cause. Betegh 2020: 69–70 rightly notices that the motive force of fire is left unexplained in Heraclitus and in Heraclitus' ancient witnesses. Aristotle appears to locate the motive force of the Heraclitean soul in itself, that is, in its immateriality and in its susceptibility to movement: it flows (*De an.* 1.2, 405a26–27: *καὶ ἀσωματώτατόν τε καὶ ῥέον ἄει*). But that is more of a description of motility than an answer to the question, exactly *what* is the cause of the soul's motion?

own thinking, if not his actual wording: “And the fall into *becoming* is a delight for them; and elsewhere he says that we live their death and they live our death” (τέρψιν δὲ εἶναι αὐταῖς τὴν εἰς γένεσιν πτώσιν. ἀλλαχοῦ δὲ φάναι ζῆν ἡμᾶς τὸν ἐκείνων θάνατον καὶ ζῆν ἐκείνας τὸν ἡμέτερον θάνατον) (R90; trans. slightly modified; emphasis added). The gloss makes perfect Heraclitean sense, whether we take B77 to be genuine or not. The pleasurable “fall” into death (i.e., change) is what nature wants; it happens “according to nature” (κατὰ φύσιν, B1, B112), as does the “return” to life in another form, which in fact occurs simultaneously with the fall into death.

The desire for death is a desire for becoming, that is, for life as becoming. There is no distinction between these two outcomes in Heraclitus’ mind, since they in fact belong to the selfsame process.<sup>76</sup> If the desire happens to be complex (two-fold or multifold, but in any case contradictory), this assures us that we are on familiar ground again with Heraclitus.<sup>77</sup> But it also points us in a better direction. The answer to the question about change is not to be sought in desire per se but rather in the conflictual organization of nature itself, which is to say, in the dynamic and precarious instability of the cosmos and the tensions that constitute its nature. Those tensions may be reflected in the contradictory desire of *psuchai* for life and death, but they are best reflected in the contradictions that characterize nature itself. Strife (*eris*), which spans the whole of the universe, brings us closer to an answer than any of nature’s individual expressions, for instance the desires of individual *psuchai*. πάντα κατ’ ἔριν γίνεσθαι, “All things come about through strife” (B8). What more motive force do we need to explain the motions of nature?<sup>78</sup> We will come back to the question of strife below. But we still need to understand what *psuchē* is for Heraclitus.

Let’s begin with the report from Diogenes Laertius, quoted earlier, to the effect that “everything is full of *psuchai* and *daimones*.” The reach of the claim is unrestricted, which ought to secure the suggestion that the whole of nature is inhabited with vital divinity, with the proviso that vitality is not restricted to living things and that *psuchai* are not the solitary locus of this vitality: vitality has to be understood in an expanded sense, one that encompasses change in all its forms, for change is the index of cosmic vitality.<sup>79</sup> This follows from the way

76. This is so even if Numenius or Porphyry is glossing and not reporting Heraclitus’ *ipsissima verba*.

77. Cf. B32, τὸ σοφὸν . . . οὐκ ἐθέλει καὶ ἐθέλει, for a similar personification of a cosmic process as a (conflicted) desiderative state.

78. My point is that the contradictory desires of *psuchai* are an expression of the law and necessity that is stated in B8: they are merely one form that this law and necessity take.

79. Supporting the unrestricted reach of divine vitality, i.e., that divinity is to be found in all parts of nature, are two further considerations: first, the biographical anecdote about Heraclitus welcoming strangers into his kitchen with the assurance that “there are gods here too” (Arist. *Part. an.* 1.5, 645a17–21 = A9); and second, the complete fungibility of all mortal and immortal things, as indicated in B62. The suspicion that Diogenes Laertius has contaminated Heraclitus’ saying with Thales’ claim

Heraclitus constructs the cosmos as a physical continuum. Transitions from one mass or physical state to another are not radical ruptures. They are inflection points in what provisionally can be described as a cycle that tracks the life of the cosmos as it passes through one state to another. When looked at from a distance, these physical states come into existence and disappear again. But when looked at from up close, the continuities loom larger. For example, *psuchai* are said to “come out of moisture as exhalations” (ἀπὸ τῶν ὑγρῶν ἀναθυμῶνται), or, more literally, to “steam up from moist parts” or “from watery stuff.” If we take this to mean that *psuchai* emerge from moisture in the course of moisture’s evaporation, we may wonder whether moisture is an ingredient of *psuchai* or whether *psuchai* emerge in their absolute distinction from moisture. I would suggest that no such absolute distinction is possible.

Betegh is on the right track when he writes,

the terms of the transformations described in B36 are not the elements as later philosophers in the wake of Empedocles conceived of them. Earth and water in B36 are not elementary forms of matter with a fixed set of properties, but large masses that comprise also contrary characteristics—and this applies to ψυχή as well. The view that ψυχή *encompasses a wide continuum of physical states* offers considerable theoretical advantages for Heraclitus’ philosophy.<sup>80</sup>

A page earlier, Betegh explains what he means by the italicized phrase: “The ψυχή is all states of matter covered by exhalations from the lowest level of atmospheric air to the uppermost layer of celestial fire.”<sup>81</sup> The range of the continuum as understood here, though wide, is not exactly unrestricted. On the contrary, it encompasses a limited pairing of seemingly opposite attributes (wet/dry, cold/hot, dark/bright) that fall under a larger and more basic physical contrast, that between fire on the one hand and water and earth on the other.<sup>82</sup> Why not extend the continuum to cover water and earth?

However we decide the issue, the status and location of *psuchai* is intriguingly uncertain. If *psuchai* are indeed found everywhere in the cosmos, do they count as a distinct and primary physical constituent (or “stuff”) of their own, as Betegh and others suggest, or do they infiltrate the whole of the universe’s

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that “everything is full of gods” (Arist. *De an.* 1.5, 411a8 = DK 11A22) is unwarranted. The two assertions are not identical, and Heraclitus could easily have been “correcting” Thales. See Finkelberg 2017: 122, 243–45, 248.

80. Betegh 2013: 243; emphasis added.

81. Betegh 2013: 242.

82. Betegh 2013: 242.

activities and states?<sup>83</sup> A third alternative is to understand *psuchai* as “souls,” as most ancient and modern commentators do. On this reading, Heraclitus is celebrated for having articulated for the first time a concept of soul that embodies the life-principle of all living beings, but above all of human beings, in whom the *psuchē* represents the central mechanism of our cognitive and motor powers and our inner psychology. I have argued against this interpretation elsewhere and will not rehearse the argument here.<sup>84</sup> The two most relevant conclusions worth repeating are these: first, that *psuchē* as cosmic stuff goes well beyond the meaning of “soul” in the conventional sense (understood as an individuating and distinctive feature of human beings, approximating to the “self” or its core properties), while the most prized physical attributes of *psuchē* (fire, heat, and light) are difficult to square with the alleged properties of souls (intelligence, cognition, rational and motor control, emotion);<sup>85</sup> second, and preeminently, that *psuchē* in Heraclitus is a sign not of life *tout court* but of life’s precarious condition, a connotation that it had already in Homer:<sup>86</sup> in distributing *psuchē* throughout the totality of nature, Heraclitus has distributed this same fragility throughout nature as well. This is one of Heraclitus’ chief lessons and his principal contribution to the philosophy of life: life is inseparable from its fragility and the fragility of all existing things; it is bound up with change, impermanence, and mortality. Fragment B62, and every other fragment named in this essay, can be understood in no other way. A few further testimonies are worth citing in this context, as these point us to an expanded conception of *psuchē*.

One of these is a notice from Aëtius, who writes that “the *psuchē* of the world is an evaporation of the moisture it [sc., the world] contains” (τῆν μὲν τοῦ κόσμου ψυχὴν ἀναθυμίασις ἐκ τῶν ἐν αὐτῷ ὑγρῶν) to which individual *psuchai* “return” once individual beings perish and their *psuchai* leave the body (A15, 17 = R48a,

83. Distinguishing individuated *psuchai* (plural) from *psuchē*-stuff (a singular mass), as Betegh 2013: 231 does, creates this problem. Where do we find *psuchai* as opposed to the stuff they derive from, and what exactly is the difference?

84. Porter 2022.

85. The equation of Heraclitean *psuchē* with breath in some contexts (i.e., “exhalations” in an extended sense) is not without basis, but human breath (A16.127–30 = Sext. Emp. *Math.* 7.127–30) is surely a manifestation of a larger phenomenon that is not reducible to breath. Neither is life (vital motion or action) reducible to *psuchē*, as we have seen. In the same testimony by Sextus, the source of human intelligence is external to it and casts it in a diminished light. It is τὸ περιέχον, that which “surrounds” human beings from without, understood in the first instance as air, but, more generally, as the environment of nature itself. *Qua* breathing, humans participate in the nature of “the [non-human] whole” (130). The passage from Sextus highlights the extrinsic character of intelligence (see Porter 2022: 21–23). But there is more to the human, conceived as a component of nature and of nature’s vast ecology (nature’s life cycles), than intelligence alone. Indeed, intelligence is not one of the hallmarks of humanity for Heraclitus, unless we are to understand human intelligence as the capacity for more-than-human intelligence, that is, as the capacity to belong to, rather than to merely grasp, the commons (τὸ ξυλόν) of nature as a whole.

86. In Homer, *psuchē* “is mentioned as present only insofar as it may depart” (Nussbaum 1972: 1), that is, “only in the context of life lost or threatened, never of life held and enjoyed” (Clarke 1999: 55).



48b). Whether the individuals in question are human beings or other living creatures is not stated, and both could be meant. In A17, Aëtius speaks of “the *psuchē* of the whole [i.e., world] (τὴν τοῦ παντός . . . ψυχὴν).” The conceit of a world or cosmic *psuchē* has no foundation in Heraclitus’ thought. These two testimonia represent a late attempt to press *psuchē* into a framework that is alien to Heraclitus, namely a microcosm/macrocosm analogy, which does not appear until Democritus (DK 68B34), then in Plato’s *Timaeus*, and finally in Stoic cosmobiology.<sup>87</sup> But behind the conceit lies the legitimate Heraclitean notion that *psuchai* populate the entire cosmos. And buried further within the same conceit is the notion that *psuchē* belongs to a physical continuum in nature that cannot be restricted to *individua*. This is hinted at in the first testimony by Aëtius (A15), which goes on to state that *psuchē*, wherever it appears, be this in living creatures or in the cosmos, is “of the same kind” (ὁμογενῆ).

Betegh makes a similar point about the homogeneity of *psuchē*:

The most fiery, and hence best state of the soul is reserved for the cosmic fire, and for the fire burning in the heavenly bowls. But these forms of fiery ψυχή show the same type of mental, intellectual, ethical properties as the more airy human ψυχή does—only on a much higher level.<sup>88</sup>

Betegh treats *psuchē* as only one slice of the physical continuum of nature that runs “from wet to dry, from cold to hot, from dark to bright,” that is, from moisture to fire via exhalations that give rise to *psuchai*. Hence, “the entire cosmic region from the lowest part of atmospheric air to heavenly fire forms a continuum.” Then comes a caveat: “there is no such clear borderline between air and fire as there is between air and water or water and earth.”<sup>89</sup>

I want to revise this insight by extending the notion of a continuum beyond water and fire, matching this with a wider involvement of *psuchē* in natural processes. All of nature is a continuum of physical states in the sense that every kind of stuff can be transformed into any other kind of stuff. This is a fact of Heraclitus’ cosmology:

ταυτό τ’ ἔνι ζῶν καὶ τεθνηκὸς καὶ [τὸ] ἐγρηγορὸς καὶ καθεῦδον καὶ νέον καὶ γηραιόν· τάδε γὰρ μεταπεσόντα ἐκεῖνά ἐστι κάκεῖνα πάλιν μεταπεσόντα ταῦτα. (B88)

And the same thing exists in [whatever is] living and dead and [whatever is in the state of] waking and sleeping and [whatever is] young and old; *for*

87. See Mansfeld 2018 [2015]; Laks 2018.

88. Betegh 2013: 243.

89. Betegh 2013: 242.



*these things having changed round are those, and those having changed round are these.* (KRS 202; trans. slightly modified; emphasis added)

This “same thing” that exists “within” can only be the persistence, rather than the singularity, of natural processes themselves, in other words, their common foundation in natural change.<sup>90</sup> But if we take this view to heart, then it makes no sense to create unequal distances between each of the physical stuffs that Heraclitus names (water and earth are no more or less proximate to each other than either one is with fire), nor does it make sense to think of stuffs as entirely distinct from one another, precisely because they exist along a continuum. Why, then, does Heraclitus name different stuffs at all? And how do air and *psuchē* fit into the picture?

The solution to these questions is best found in the fact that all physical states of the cosmos exist along a continuum that stretches across the whole of nature. Because the cosmic stuffs are without exception mutually interconvertible (each can be transformed into the others), and because the transitions from one state to the next are anything but clean (stuffs bleed into one another along this continuum, producing further intermediate states, such as air, which represents the evaporation of water ascending to fire),<sup>91</sup> hard and fast distinctions (“borderlines”) are distortions of nature’s reality, as are the way the stuffs come to be named. This is doubtless one reason why Heraclitus fits so oddly into the evolutionary scheme devised by Aristotle and others that maps a progressive addition of elements by different generations of Presocratics (first water, then the *apeiron*, then air, and so forth). This may also be the reason why Heraclitus is so reticent about the details of physical processes. (As Hermann Diels once wrote, “natural science owes nothing to him.”)<sup>92</sup> Heraclitus is not interested in natural explanation for its own sake as his Ionian predecessors were. On the contrary, natural changes have for him primarily an emblematic function. Treating natural processes as molar phenomena that lack finely tuned mechanisms permits him to make sweeping assertions about oppositions on a larger, cosmic scale and to explore the blurring of these oppositions at the edges of their distinctions (along their “shared” borders), much the way he does with the question of mortals and immortals. Put differently, with his theory of nature Heraclitus wants to track biomasses and their rhythmic patterns of divergence

90. That is, what remains the same is precisely *not* “a single invariable process” (so Kirk, Raven, and Schofield 1983: 189) but the shared variability of natural processes *tout court*. This is what is ξυνός in them and what is the defining feature of the natural world (B2, B80, B103, etc.).

91. Air is evidently not a stuff in its own right, though it does have a place in Heraclitus’ system. *Psuchē* appears to be a stuff or is at least stuff-like.

92. “Die Naturwissenschaft verdankt ihm nichts” (Diels 1901: vii); cf. vi: “Heraklits Philosophie ist nicht ionische Naturforschung.”

and convergence rather than discrete causes of natural change. His theory maps the world's innermost immanent logic.<sup>93</sup>

#### NATURE REIMAGINED: *LES EXTRÊMES SE TOUCHENT*

As I suggested above, Heraclitus speaks of the measures by which nature keeps time for itself. But these measures are not fixed quantities. They are best seen as rhythmic comings-to and goings-away, at once lambent like a flame and flowing like a river, and whose overall arc resembles a cycle. But is it one? It is inconceivable that nature proceeds in a one-way direction in order to complete a given cycle. In fact, the very notion of a cycle may send us off on a false trail. Nature cycles, but as it does it is constantly turning and churning, with every elemental stuff transforming into every other stuff, and with every identifiable noun-like term flipping over into its opposite, or just into its not-quite-“other,” and then back again. The flipping action gives us the “verbs” of nature, thanks to which nouns become verbs, as we also saw. What is more, change is never total in Heraclitus: it never proceeds from A to not-A, but only from A to B, where B contains some A and A contains some B,<sup>94</sup> albeit in vanishingly smaller amounts, and then back again. Thus, waters continuously lap the shores, leaving trace amounts that “become” their (presumptive) opposite, earth.<sup>95</sup> Earth masses constantly dissolve into watery bodies.<sup>96</sup> *Psuchai* are continually dying and being born—not again (there is no reincarnation or transmigration involved for Heraclitus) but are simply being born.<sup>97</sup>

It may be that *psuchē* is a kind of primordial stuff that, like all other stuffs, both is and is not mortal: it is mortal in the way that it appears in different bodies over time, immortal in that it is always available in the world in one form or another. Everything is full of *psuchai* and *daimones*, that is, everything is (precariously)

93. Pace Kahn 1964: 194: “His real subject is not the physical world but the human condition,” a position taken early on by Diels 1901: vii (“‘Ich erforschte mich selbst’: das war sein Ausgangspunkt”), and now a majority view in the scholarship on Heraclitus.

94. One example: “of sea the half is earth” (B31). Compare Arist. *Gen. an.* 762a18–21 (a general statement that makes no explicit mention of Heraclitus): “there is water in earth, and air in water, and in all air is vital heat (θερμότητα ψυχικήν), so that in a sense all things are full of soul” (trans. Platt, rev. Barnes 1984).

95. Contrast Vieira 2023: 210–11: “the generation of A is the death of B and vice versa,” with no overlaps between these two states and no continuants underlying the process of change. Heraclitus can in this way be shown to have obeyed the principle of non-contradiction after all. On my reading, there is no need to postulate either continuants or complete opposites. The presumption of rigorous logical opposition leads Barnes 1982: 79–81 to convict Heraclitus of “conceptual inadequacy” (81) and inconsistency.

96. For a Stoic echo, see Cic. *Nat. D.* 2.100 (trans. Walsh): “The sea itself, in its longing (*appetens*) to embrace the land, sports on its shoreline, so that the two elements seem to merge into one (*ut una ex duabus naturis conflata videatur*).”

97. Kirk 1951: 39 is partly right to insist on “a reciprocal and not a cyclical movement” of things in the cosmos (cf. also Kirk 1962: 114–15). But “reciprocal” has its problems too, as the concept is founded on an underlying sense of balance rather than on a more fluent kind of change.

mortal and immortal. It may be, too, that *psuchē* just is another name for this endless transformational process—that which gives it life and that which, in expiring, gives it death. But to say this is to treat life and death as exclusive opposites, and that is not at all what Heraclitus urges us to do. As we have also been seeing, nature is not patterned by polar extremes, nor even by the *coincidentia oppositorum*, and still less by a “unity [or “identity”] of opposites,” but by tensions that are marked by similarity and difference at one and the same time. Entities are fraught with, and even endangered by, their likeness and proximity to other entities and by their divergence from themselves.<sup>98</sup> The differences are not absolute but are displayed through shades of contrast. In Heraclitean nature, *les extrêmes se touchent*. That is the lesson of B62 and of every other relic of his thinking.

B62 brings about a further erasure of difference that is true of his philosophy as a whole. The identities that he names are rigorously *deindividuated* by way of a syntactical mechanism of exchange that entangles entities in relationships that are mutually conditioning and that dissolve the distinctness of their members. As we saw earlier, the “mortals immortals” fragment is palindromic in the sense that we can read it forwards but can only complete the meaning, to the extent we can, by returning to where we began. However, because the sense of the forward progression is typically undone by means of its reversal, palindromic reading is self-canceling: it dissolves the distinctions it appears to establish. What is more, the words of B62 can be grouped and regrouped in any number of ways, as with a Rubik’s cube, which yields an ambiguity deeper than that found in many of the other fragments but no different in kind.

Commentators speak of the cyclical process of nature that run through Heraclitus. What exactly does Heraclitus’ “life cycle” describe? It is difficult to imagine it mapping onto any linear process in nature. Is life even a cycle, that is, a linear process that returns to itself? As Howard Jones correctly notes, in B31 sea “is simultaneously losing and gaining *in two different directions*.”<sup>99</sup> And the same is true of fire: sea “is in part transformed into fire, in part supplied by fire.”<sup>100</sup> In fact, all the material components of the world are losing and gaining substance at the same time and at any given moment: the cycle is not so much a single-file rotation (A → B → C → B → A) as an intercalation of rotations compounded of

98. Cf. B61 = LXX: “The sea is the purest and foulest water (θάλασσα ὕδωρ καθαρῶτατον καὶ μιαιώτατον): for fish drinkable and life-sustaining (σωτήριον); for men undrinkable and deadly (δολέθριον).” Fire is the source of light and destruction, of “shortage and surfeit” (A5, B30, B31, B65, B66, B67, etc.). Cf. Kahn 1979: 23, 145. Similarly, the work of doctors brings about both good (healing) and evil (painful) things (B58), as do other things, for “Justice is strife” (B80), and “if all things are identical in their definition [as Heraclitus claims], . . . the essence of the good and the evil will be identical” (Arist. *Phys.* 1.2, 185b19–22 = R40). Cf. Arist. *Top.* 8.5, 159b30–33 = R41.

99. Jones 1972: 195–96; emphasis added; cf. Guthrie 1974, 208–209.

100. Jones 1972: 195. Jones oddly does not recognize that fire undergoes simultaneous gains and losses of its own. Thus, his claim that “sea alone experiences transformations in *two* directions” (195; emphasis in original) cannot be right.

further intercalated rotations. It would be a fool's errand to try to diagram this on paper. A three-dimensional, real-time model would be needed to capture these nested processes of transformation. But that model would resemble only one thing, the natural world, which would no longer be quite *one* thing. Rather, it would be a complex of intertwined processes and a matrix of changing environments that are completely, mutually, and dynamically entangled—much like Heraclitus' writings. This complexity is what he calls nature's "intelligence."

#### NAMING REALITY: EVERYTHING IS A MISNOMER

Readers of Heraclitus have from the beginning appreciated or depreciated the artfully congested nature of his sayings. Most recently, Charles H. Kahn devoted a book to exploring the "linguistic density" of Heraclitus' fragments.<sup>101</sup> Building on Kahn, Roman Dilcher observes that Heraclitus' *logos* "physically displays what it says."<sup>102</sup> That is correct. But where readers will differ is in deciding on exactly what Heraclitus' language is "saying." What if language cannot index the world? Must we then say that Heraclitus' use of language is an object lesson in this failure? What is his *logos* a *logos* of?

This much is certain: Heraclitus' theory of nature challenges human intuitions about how names identify reality. Plato and Aristotle both worried that if reality is in flux, names will be too: they will never be able to capture what is always changing.<sup>103</sup> Heraclitus' reply is that names merely hypostasize what is always in transition: human nomenclature cannot help but fail to identify (name and capture) reality.<sup>104</sup> Nouns are too substantival to name the processes of nature. But verbs serve this purpose well, especially when they represent ongoing action. B62 is a casebook illustration. In it, "death" (θάνατον) and "mortal(s)" (θνητοί) are, as it were, translated into a participle with verbal force, "dying" (τεθνεῶτες), "while life" (βίον) and "immortal(s)" (ἀθάνατοι) are translated into another participle with verbal force, "living" (ζῶντες). The idea that one can "live a death" or "die a life" is a paradox only if we insist that polar opposites cannot coexist. The problem, however, is not the notion that opposites can coincide, but that the antipodal terms are not clearly opposites at all. It was a commonplace in antiquity that to live is to die a thousand deaths and that to die is to live in another form.<sup>105</sup> For Heraclitus,

101. Kahn 1979: 89.

102. Dilcher 1995: 142.

103. Pl. *Cra.*; Arist. *Metaph.* 1.6, 987a32–34; 3.3, 1005b23–25.

104. Snell 1926: 368 with n.1 makes a similar point, under the surprising influence of Ernst Cassirer: for Heraclitus, names damagingly isolate, sever, and decontextualize what originally belongs to an interconnected but self-contradictory totality. I am contesting the idea of a neat totality.

105. "We die many deaths and are dying even now" (ἦδη τοσούτους τεθνηκότες καὶ θνήσκοντες, B76b = Plut. *De E ap. Delph.* 392C, quoted in n.52 above), said in an examination of Heraclitus and in an argument against fearing death. Seneca (*Ep.* 24.20) repeats the same thought: "We die every day (*Cotidie morimur*), for every day some part of life is taken from us. Even when we are still growing,

opposites are not absolutely opposite or distinct. Rather, they exist along a gradual, never-ending, and all-encompassing continuum that is inherently in tension with itself at every point along the way. To state the same thought more concretely and with reference to B62, Heraclitus does not recognize a firm boundary between life and death, because there is no way to determine where life begins and where it ends. Rather, the physical constituents of nature are continually, and continuously, living and dying at every moment in time. The thought is perplexing only if we insist on the absolute polarity of opposites or contraries. At every turn, Heraclitus defies the human tendency to read the world in a bipolar fashion and thereby encourages us to step outside of our ordinary frames of reference and to assume, to the extent that we can, a cosmic perspective. But neither does that larger perspective eliminate the tug of war between competing processes in the world. “The way up is the way down” (ὁδὸς ἄνω κάτω μία καὶ ὠπτή, B60). At each and every point along the ladderlike continuum that is being described in B60, however we locate this continuum in nature, up is also down.<sup>106</sup>

To invoke frames of reference that stem from our use of language is inevitably to invoke modes of knowing: names reflect cognitive powers. At the limit, Heraclitus’ critique of naming conventions is tied to his critique of the human capacity to grasp through its cognitive apparatus the overall pattern of dynamic processes by which the universe unfolds itself, and which it does not as a single entity but as a set of ceaselessly moving and changing parts. Those patterns combine apparent opposites in unapparent ways, as in the counterintuitive claim that “the way up is the way down.” The last claim acts as a comment on how we name reality, inasmuch as “the way up” names one thing, while “the way down” names

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our life is shrinking (*et tunc quoque cum crescimus vita decrescit*)” (trans. Graver and Long). (Note the simultaneity of opposed vectors: growing/shrinking.) And Marcus Aurelius, likewise writing against the fear of death, speculates that if death is nothing other than the state of having “a somewhat altered consciousness” (εἶτε ἀλλοιοτέραν αἴσθησιν κτήσῃ), when you die “you will merely be a living creature of another kind, and you will not have ceased to live (ἀλλοῖον ζῶον ἔσῃ καὶ τοῦ ζῆν οὐ πάσῃ)” (*Med.* 8.58; trans. Hard). Marcus is the source of B76c (*Med.* 4.46) which is a version of Plutarch’s B76b.

106. A tendency in antiquity, followed in modern scholarship as well, is to associate the movement up and down with the cycles of *psuchai* (e.g., as exhalations that rise and, presumably, descend again into water and earth), of fire running through its own cycles (e.g., Diog. Laert. 9.8–9 = A1.8–9), or of physical processes more generally, as in Arist. *Meteor.* 1.9, 347a1–3 (see n.41 above). Hippolytus, the source for B60 (*Haer.* 9.10.4), used the example to illustrate opposites of any kind. The same list included B62, understood by Hippolytus as the claim that immortals are mortal and vice versa (9.10.6). If we take B62 as our model continuum, as Maximus of Tyre at one point does (*Diss.* 41.4.40), we can see how the ladder is circular, not linear. The “top” (say, life) points back to the bottom (death); but the directional markers “up” and “down” are defeated by their reversibility. (See next note.) This may be how Cleomedes understood B60 as well (*Cael.* 1.8.96–99). Another example given by Hippolytus in the same series is that of a circular device (a carding wheel?) whose “way” (ὁδός) is “both straight and crooked,” i.e., curved (B59 = *Haer.* 9.10.4). To take an example that is more readily visualizable today, a pizza wheel runs in a straight line even as the wheel turns in a circle. At no moment can we say that the path of the wheel is neither straight nor curved: it is always both at once.

another, its apparent opposite. But the statement also implies a critique of our natural inclination to cognize “up” and “down” as opposites, whereas for Heraclitus, on a universal understanding, they are both contraries (things that are opposed, but not absolutely so) and “one and the same” thing.<sup>107</sup> At issue is not a “unity of opposites” but a never-resolvable war or strife or tension (τὸ ἀντιξοῦν, B8) that bends differences together without relinquishing their difference—a *palintropos harmoniē*.<sup>108</sup>

Consequently, names are a delusive guide to reality. How, then, can we gain a better foothold on reality? The answer is not to learn to “us[e] names properly.”<sup>109</sup> On the contrary, we must recognize that names are indelibly catachrestic. The words “mortal” and “immortal” are a case in point. If we follow Heraclitus’ example, the cure to cognitive failure is precisely *not* to clarify our language but to pursue opacities of meaning that lie at the heart of reality. That is the true core of his teaching and the true justification of his moniker, which he would have welcomed: “The Obscure.”

Heraclitus’ critique of naming conventions, brightly on display in the mortals-immortals fragment, is the theme of other fragments, most conspicuously the following:

“ὁ θεὸς ἡμέρη εὐφρόνη, χειμῶν θέρος, πόλεμος εἰρήνη, κόρος λιμός”—  
τάναντία <γὰρ> ἅπαντα· οὗτος ὁ νοῦς.—“ἀλλοιοῦται δὲ ὄκωσπερ  
<πῦρ>, <ὄ> ὀκόταν συμμιγῆι θυώμασιν, ὀνομάζεται καθ’ ἡδονὴν  
ἐκάστου.”

Hippol. *Haer.* 9.10.8 Marcovich = B67

107. ἄνω καὶ κάτω can also mean “to and fro,” i.e., “hither and thither” (LSJ s.v. “ἄνω” II.2). Reinhardt 1942a: 19–20 prefers this meaning, no doubt in reaction to ancient, and especially Christian teleological and eschatological readings and in support of his own view of Heraclitus’ immanentism. It makes no difference to my larger point whether the “way” is horizontal or vertical. καὶ (“and”) reverses the two poles and neutralizes the priority of either one. In other words, καὶ does the same work as πάλιν in 91b (see p. 66 above) and *παλίντροπος* in B51. “Up and down,” however, continues to live on in modern scholarship as an invitation to project hierarchies of value, with “up” associated with intelligence and fire and “down” with a descent from this lofty region that terminates in “lifeless” water and earth, a value scheme that was first imposed in later antiquity.

108. Osborne 2004: 86 notes that the so-called “unity of opposites” is a misleading expression “if that means denying the difference between the opposite characteristics.” Nonetheless, like so many readers of Heraclitus she finds a logical way out by assuming that opposites “can . . . be used to describe the same thing at the same time” according to different perspectives or points of view (84), a move that permits the location of ultimate meaning in unified cosmic “patterns” that are governed by a unitary “rationale” and a “deeper harmony of structure underlying change” (Osborne 200: 91). My point is that there is no one “same thing” that is being named by opposite terms beyond their mutual antithesis (their clashing) itself. Thus, Heraclitus is directing us to the identity or proximity of the predicates (e.g., “up” and “down”) and not to the *tertium quid* of which they are predicated and into which they can, in theory, be resolved (“the road”). Dilcher 2013: 261–65 criticizes the “unity of opposites” thesis as a mirage of modern scholarship, which may be true. Terms for “opposites” do not appear in the fragments and appeals to “unity” are hedged with counterappeals to multiplicity.

109. So Dilcher 1995: 123.



“God is day night, winter summer, war peace, satiety hunger”—all the opposites, this is the meaning—“he undergoes alteration in the way that <fire>, when it is mixed with incense, is named according to the scent [or “flavor”] of each of them.” (KRS 204; trans. slightly modified)

A common reading of B67 is to view god as a singular entity that manifests itself as opposite qualities depending on the context, as though the various opposites were his manifold appearances and he were a pure and neutral substrate, unqualified and “odorless.”<sup>110</sup> This way of approaching the text produces inappropriate distinctions, for instance between substrate and qualities or reality and appearances, both of which were unknown to Heraclitus. But it also introduces a human-centered, relativistic perspective on nature, as though the opposites were merely how nature appears to us but not how it actually is.<sup>111</sup> A more powerful way to understand the fragment is to recognize that god just *is* the opposites as they are named here and not some entity that is distinct from them. Neither a transcendent nor a cohesive force, “god” is equivalent to the ever-changing universe in all its immanent plurality across every conceivable polarity. God is less the point of convergence and divergence in nature’s processes than the simple fact of this pattern. Kahn’s comment is apt: “God is in some sense defined by or identified with the opposites.”<sup>112</sup> He might have added that nature is god and he would arrived at the same idea, but also at its truer expression. God and nature are synonymous for Heraclitus. Nature is the mortal and immortal process of change. God is simply one more name for nature’s changes.<sup>113</sup>

Heraclitus’ universe may be godlike, but it is not ruled by god. It is self-sufficient and self-steering: “All things are steered by all things” (ἐκυβέρνησε πάντα διὰ πάντων, B41). It does not even need to be considered godlike. As Heraclitus says, the universe is both godlike and not, comparable to Zeus and not: “The one truly wise thing [or else, “wisdom itself,” τὸ σοφόν], does not and does want to be called by the name of Zeus” (ἐν τὸ σοφὸν μοῦνον λέγεσθαι οὐκ ἔθελει καὶ

110. E.g., Fränkel 1938b: 240 (“as odorless as possible”); cf. Dilcher 1995: 124. Diels’ supplement <πῦρ> is somewhat confirmed by Hippolytus’ statement (*Haer.* 9.10.8) that B67 appeared in the same section of Heraclitus’ book as B65 and B66, both of which fragments concern fire. The alternative supplement <ἔλαιον> (“oil”), adopted by Fränkel and Dilcher, is strained.

111. Cf. Kahn 1979: 280: “according to the pleasure of each man (who so names it).”

112. Kahn 1979: 279. When he rephrases this by stating that god is “strictly identical only with the total pattern of opposition” and understands that “[t]his pattern is the order of the universe, its unifying structure as a balancing of opposites over time,” Kahn reinvests nature with a unity that forfeits the dialectical complexity and intrinsic tensions that I have been suggesting are its primary features in Heraclitus.

113. Though it is tempting to say that god is the logic of oppositionality that is inherent in nature, it may be best to say that this logic is nothing other than what occurs in nature and is inseparable from it except by conceptual abstraction. That is, nature operates according to a logic, but the logic is manifest in its operations alone. This takes some of the pressure off “fire,” which is where readers of Heraclitus tend to concentrate agency in its purest or highest form. But again, agency is visible throughout nature, including what, for these readers, would count as its lowest forms, for instance the actions of water and earth.



ἔθελει Ζηνὸς ὄνομα, B32 = KRS 228; trans. modified). The diffidence is partly a rebuke of traditional theology, partly a disenchantment of the divine, and partly a strategic refusal to be pinned down to a singular label or name given the fact that language is an undependable medium. A stalemate of sense is ineluctable here too. The phrasing and logic of B32 are identical to B49a (= D65): “We step and do not step into the same rivers, we are and are not.” Heraclitus acknowledges a wide range of apparent equivalents that can be used to name the logic of the universe: *logos*, *psuchē*, the wise, fire, thunderbolt, god, *daimōn*, justice, strife, war, divergence, that which is shared in common (τὸ ξυνόν), a judge, back-turned fitting-together, a boardgame player (a child), or a shepherd. One might object that some of these equivalents point to a directive agency that is responsible for the goings-on in the universe, as in “thunderbolt steers all things” (B64). But there are two valid replies to this kind of objection.

In the first place, not all these equivalents support the claim. Some do, but many of the most important labels do not, at least not on their face—for instance, *logos*, *psuchē*, *daimōn*, fire, and strife. All that the apparently directive fragments tell us is that nature, fire, or Zeus (imagined as the nameless “god” of B67 or B102, which is nature again) is the principle according to which everything occurs. To state that X happens “according to nature” (B1, B112) is to make a virtual tautology, since everything *is* nature. Nothing in nature can occur that is not in agreement with nature. In sum, Heraclitus’ cosmos may be divine, but it does not require the presence of a “cosmic god” that “order[s] the regularity of the sun and stars, the daylight and the seasons, by an act of cosmic intelligence.”<sup>114</sup> All the divinity that is exists *immanently within* the world, which is “full of *psuchai* and divinities,” but which is not supervised by these. Nature is a watch without a watchmaker, and with no one to keep an eye on the time either. Intelligence—or intelligent agency—belongs to the cosmos as a whole. It is what defines the logic of nature, which is the only intelligence (and divinity) there is.

#### WHY *HARMONIĒ* IS NOT “HARMONY”

Modern scholars of Heraclitus (with the exception of Schleiermacher, Hegel, and Nietzsche) are not fond of unstable models of complexity. They prefer concepts like regularity, consistency, and structured coherence. “Regularity” is not the most relevant description of nature’s processes.<sup>115</sup> Complexity is. It is not the case that “sea alone experiences transformations in *two* directions” and therefore has “the most complex” role in these processes.<sup>116</sup> All the physical constituents do this, and

114. Kahn 1979: 171.

115. Jones 1972: 196.

116. Jones 1972: 195, 197.

all play an equally complex role like that of sea or water. But none of them is more complex than the totality of these processes. Granted, it is immensely difficult to picture, let alone conceive, this model on a cosmic scale. In places, Heraclitus tries to help us out with a different image: that of a fitting together of contraries in a backward-turning *harmonīē* (B51):

οὐ ξυνιαῖσιν ὄκως διαφερόμενον ἐνωτῶι ὁμολογέει· παλίντροπος  
[παλίντροπος: Hippol.; παλίντονος: Plut.] ἄρμονίη ὄκωσπερ τόξου καὶ  
λύρης.

They [sc., people generally] do not understand how being at variance [with itself] it [sc., nature, or anything in nature]<sup>117</sup> agrees with itself: there is a backward-turning [or “back-stretched”] attunement [or “fitting-together”] like that of the bow and the lyre.<sup>118</sup>

A reader of this fragment would have known that “the bow is a ‘stringless lyre’” (καὶ “<τὸ> τόξον ‘φόρμιγξ ἄχορδος’”), as Aristotle observes (Rh. 3.11, 1412b24), quoting an unknown poet (PMG fr. 951, Adesp. 33 Page).<sup>119</sup> A reader would also have known that “the bow and the lyre are the two fundamental attributes of Apollo”—fundamental but also irreconcilable.<sup>120</sup> Heraclitus’ statement vibrates with internal contrariety: how can things that are turned in opposite directions also fit together? The turning and the fitting are themselves at odds. But this is the key to his philosophical outlook, as we saw above: “All things . . . are *fitted together* thanks to the *contrariety* of their character,” or, if one prefers, “through *opposition*” (διὰ τῆς ἐναντιοτροπῆς ἡρμόσθαι, A1.7 = Diog. Laert. 9.7). Diogenes’ language must be a calque on B51 (παλίντροπος ἄρμονίη).<sup>121</sup> In another fragment, Heraclitus defies us to think contraries together:

τῶι οὖν τόξῳι ὄνομα ΒΙΟΣ, ἔργον δὲ θάνατος.

B48; text of Snell 1966: 141

The name of the bow (*toxōi*) is BIOS [“bow” (*biós*) or “life” (*bíos*)], but its work is death.

117. Pl. *Symp.* 187a4–6 indicates the cosmic character of the image, which must be inferred in B51: ‘τὸ ἐν’ γὰρ φησι [sc., Heraclitus] ‘διαφερόμενον αὐτὸ αὐτῷ συμφέρεσθαι, ὥσπερ ἄρμονίαν τόξου τε καὶ λύρας’ (punctuation as in R32). Plato’s quotation represents a free reworking of the fragment, which was much cited and reworked in antiquity, including by Plutarch, who twice inserted κόσμου after ἄρμονίη for clarity’s sake (*De E ap. Delph.* 369B; *De Is. et Or.* 473F).

118. I have combined the translations of KRS 209 (who read παλίντονος, “back-stretched,” as transmitted by Plutarch and Porphyry), LXXVIII, and D49.

119. Page compares Demetr. *Eloc.* 85 on Theognis for the same insight.

120. N.2 ad D49. On the clash between Apollo’s bow and his lyre in Homer, see Lynn-George 1988: 151–52 and Porter 2021: 200–201.

121. This is widely acknowledged (Kerschensteiner 1955: 397; Vlastos 1955: 348–49; Dilcher 1995: 196, etc.).

As Bruno Snell points out, the fragment hinges on a word that should be printed as it would have appeared in Heraclitus' original text—namely, as “BIOΣ.” (Accentuation was not introduced into written Greek texts until a much later date.) BIOΣ can mean either “bow” or “life,” depending on the way it is pronounced. Which meaning is intended? Heraclitus declines to say and leaves us instead with a word that is radically ambiguous and ultimately undecidable. Pulled in different directions, BIOΣ is literally *palintonos* (“back-stretched”).<sup>122</sup> As a result, the difference between *bíos* and *biós* in B48 is not so much heard as it is overheard. A contemporary would have “heard” life in the word for bow and “death” in the word for life. That this is so is shown by our source for the fragment, the ninth-century *Etymologicum Genuinum*, which transmits the text as a gloss on “βίος” (“life”) and reads βίος into the text. Modern editions and most translations follow suit. But this hardly solves the riddle of the fragment, for how can the name of the bow be “life”?

The fragment is one more example of a sentence that requires palindromic reading. It must be read forwards and backwards if we are to catch the sense.<sup>123</sup> Only in this case, the sense resides in a word that on either pass is missing from the sentence and that must be supplied by the ear and the mind. Even then, a reader will have to make sense of the difficult coincidence of life and death that underlies the (non-word) BIOΣ. The upshot of the fragment is that life is at odds with itself, as is its antonym, death.<sup>124</sup> They are held apart and together in a *palintropos harmoniē*. This was the lesson of B62 (“mortals immortals”), too. Jacques Derrida has another name for what Heraclitus is naming in both cases: “lifedeath” (*lavielamort*).<sup>125</sup>

122. *Palintonos* is the regular epithet of *toxos* in Homer, where the bowstring's tension produces a sound like a lyre (*Od.* 21.404–411). *Tonos* meaning pitch or musical sound is first attested in the fourth century (Xenophon, Plato, orators, Aristotle). It appears as a synonym for meter in Herodotus.

123. As Dilcher 1995: 129–30 notes well.

124. Cf. Snell 1926: 369: “Der Name sagt also das Gegenteil von dem aus, was das Wesentliche ist,” such that “Sinn und Gegensinn” are fused together. Snell is right to take this elimination of determinate meaning to be a trademark of Heraclitus' use of language and of his conception of *logos* (what I will call the “logic” of *logos*) as distinct from *onoma* (“*der Name*” and “*die Bezeichnung*,” i.e., language as a linguistic phenomenon). Heraclitean language mimics, to the extent that it can, the logic of *logos*, through its antinomies, its verb-like dynamics, and its indeterminacies. This is the source of Heraclitus' famed and dreaded “obscurity,” on which see now Laks 2023.

125. Derrida 2020: 220. Elsewhere in the same text, Derrida writes “*la vie la mort*,” “*la vie-la-mort*,” “*la vie/la mort*,” “*la viela mort*,” as if to highlight the inadequacy of any linguistic equivalent of the enjambment of life/death. Cf. Bollack and Wismann 1972: 169 (§3.2) for a less potent version of the same idea: “*vie-et-mort*.” Derrida's portmanteau concept comes with a proviso that bears repeating in this context: “by saying . . . ‘life death’ (*la vie la mort*), I am *neither* opposing *nor* identifying life and death . . . , I am neutralizing, as it were, both opposition and identification” (Derrida 2020: 6). To affirm the imbrication of life with death, as Heraclitus does, is not to posit “the essential *unity* [or “*oneness*”] (*das wesentliche Einheit*) of life and death” (Hölscher 1968: 139), not least because Hölscher is presuming that opposites are united and resolved at the deeper level of an invisible “*harmonia*” (Hölscher 1968: 139). Heraclitus' view nonetheless affirms life even as it eliminates its opposition with death, because nature is an ongoing process: it outlives itself at every moment. In short, becoming continually *is* and *exists*. By the same token, death, and death's continuous harassing of life, is part of this same vital mechanism. Derrida's view of lifedeath is equally affirmative at the end of the day: “Everything I say . . . about survival as a complication of the opposition life/death proceeds in me

To return to my original question, How alive is the Heraclitean cosmos?, the answer cannot be given without a clearer understanding of what the term “cosmos” entails. Heraclitus’ cosmos, I want to suggest, is not defined by a reference to the identity or self-identity of the world or nature. It is defined by the parts—the relations and processes—that make it up,<sup>126</sup> though the parts are not literal parts, nor do they constitute a literal whole. Because the constituent parts of nature are forever changing and different, so too is the cosmos that is their ever-changing product. If this is correct, then we have to say that the Heraclitean cosmos is nothing other than the immanent constitution of reality as we know it or fail to understand it.<sup>127</sup> It is the world’s harmony (*harmonīē*) in the literal sense of the term: it is nothing other than the way its parts fit together in an ever-changing configuration. But the “harmony” of the world is not grounded in a simple concept of order and organization, and least of all can it be found in some hidden or invisible structure, as is often claimed, in part on the basis of B54: ἄρμονιῆ ἀφανῆς φανερῆς κρείττων.<sup>128</sup> Looking for a foundational stability beneath the visible *harmonīē* merely pushes the problem back one level. The properties of a *palintropos harmonīē* are the same wherever they exist, be it on the roiled surface of nature or in its allegedly quieter substructure. Nature is restless even at rest: “it rests by changing” (B84a). Thus, *the invisible harmonīē is no less back-turned than its visible counterpart*. Indeed, the word *harmonīē* conveys these “oxymoronic” tensions by itself even without the epithet *palintropos*, as B8 shows: τὸ ἀντίξουν συμφέρον καὶ ἐκ τῶν διαφερόντων

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from an unconditional affirmation of life. . . . because survival is not simply that which remains but the most intense life possible” (Derrida 2007: 51–52). Cf. Kahn 1979: 189 for a simpler formulation: “But the doctrine of opposites is, among other things, an attempt to attain a larger vision by recognizing the life-enhancing function of the negative term, and hence comprehending the positive value of the antithesis itself.” I thank Mario Telò for the reference to Derrida’s seminar.

126. See Wein 2022 for a reassessment of the archaic conception of *kosmos* as a machine-like assemblage and ordering of parts.

127. Immanence is widely recognized, e.g., by Reinhardt 1916: 213; 1942a: 23 (“immanent”); Snell 1926: 365 (“der Sinn, der in den Dingen ruht”); Vlastos 1955: 363, 366; and Kahn 1979: 22, 267, 275. But the full implications of immanence are not always taken on board. Where Hladký 2022: 256, speaking of Heraclitus as he is presented in the Derveni Papyrus, notes that “the Erinyes . . . represent . . . the antithetical relations which in fact sustain the world,” I would want to question the distinctness of “the world” from those relations: the world *is* those relations themselves. Hladký goes on to contrast “the cosmos” as that which “regulates the mutually conflicting actions and demands of individual things,” but once again I would want to insist that the cosmos is comprised *of* those conflictual relations and is not distinct from them, nor is it their regulating force. In the context of the Derveni papyrus, this would result in an interesting question. If the Erinyes are needed to keep the sun within its legitimate bounds, we cannot say that the *sun* is “the guarantor of cosmic order” (255). The Erinyes would have to be this guarantor themselves. But if the Erinyes instead “represent the antithetical relations which in fact [constitute] the world,” then we have to acknowledge that the world is self-regulating; it has no guarantor beyond itself. Particularly attractive here is the connection between *Erinyes* and *eris* (255–56; cf. Hes. *Op.* 803–804), which brings us full circle back to my suggestion that strife is constitutive of the cosmos, its one and only “ordering” principle.

128. Thus, Reinhardt 1916: 179: “erst mit dem Gegensatz tritt jedes Ding ins Dasein, und die innere Einheit, das ταῦτόν, die ‘unsichtbare *Harmoniē*’ (Fr. 54) wird sichtbar erst durch Zweiheit, Widerspruch und ewigen Wechsel”; 180: “so steckt in allem Zwiespalt eine unsichtbare Einheit.”

καλλίστην ἄρμονίαν καὶ πάντα κατ' ἔριν γίνεσθαι. The καλλιστὴ ἄρμονίη is produced by strife.<sup>129</sup>

We will return to B8 momentarily. But why assume that ἀφανής in B54 means “invisible” or “hidden” and that it designates some final and “total unity underlying *logos*,” or is even equivalent to that *logos*?<sup>130</sup> It could simply mean “unapparent,” denoting a quality, whether of change or of contradictoriness, that escapes attention on a first or second glance, but which becomes evident, and even self-evident, upon deeper reflection. But if so, an unapparent *harmonīē* is better or stronger than an apparent one because it obliges us to confront the paradoxes of the natural world directly.<sup>131</sup> Only then do those paradoxes become truly apparent to us—which is not to say that they resolve into quiescence whenever they come into view: they remain entangled in disturbing contrariety.<sup>132</sup> Heraclitus is not seeking to console us with ultimate coherences but to provoke us with irresolvable contradictions. This is one reason why the notion of a riddle is misleading. It suggests the possibility of a solution, when in fact there is no way to solve the riddle of nature.<sup>133</sup> If we wish

129. Kranz 1958: 253 calls *πάλιντροπος ἄρμονίη* a “Heraklitesche Oxymoron” but does not venture any thoughts on *ἄρμονίη* taken by itself or as coupled with ἀφανής. Bollack and Wismann 1972: 189 are thus correct to say that “l’harmonie visible n’a pas un autre contenu que l’harmonie invisible.” The reverse is equally true, with the caveat that *harmonīē* is not a “harmony.”

130. “Unsichtbar”: DK; “invisible (under-the-surface)”: Marcovich 1967: 36; “hidden”: LXXX (i.e., the “divine unity that structures the world,” Kahn 1979: 203); “unapparent,” i.e., “real” but hidden: KRS 207 (connecting it to B123 = KRS 208: “Nature likes to hide itself”); “invisible” (D50); “total unity underlying *logos*”: Kahn 1964: 202.

131. Thus, to this extent, Reinhardt and Kirk are both right: “Vollends Heraklits Aussagen über die Natur—man sehe sie sich an!—sind sonst nur Deutungen des Sichtbaren, vor Augen Liegenden, des Weltzustandes, wie er ist” (Reinhardt 1942a: 14); “His criticism of men is based on the fact that the truth is there to be observed [through “observation” and “understanding”], it is common to all, but they cannot see it” (Kirk 1951: 41). Everything hangs on what we imagine eludes human observation. See next note.

132. “Connexion” (KRS 207) is for this reason a misleading translation of *harmonīē*, because the implication is that *harmonīē* “produces a coherent, unified, stable and efficient complex” (Kirk, Raven, and Schofield 1983: 193)—“if not, the system collapses” (193n.2). Take away the assumption of stability as the bedrock of Heraclitus’ picture of things and the picture changes radically, as do our expectations for Heraclitus. Cf. Guthrie 1974: 202–203, who suggests that what underlies Heraclitean nature is “continuous imperceptible change” (this appears to be Aristotle’s reading, too, at *Ph.* 8.3, 253b11), i.e., “unremitting strife and tension” (Guthrie 1974: 210) that resists peaceful “harmony” (199).

133. Pace Schofield 1991: 32, who treats B62 as “a riddle which can be solved only by the reader who has thought his or her way through the whole Heraclitean *logos* already.” A good counterexample is the riddle of the lice (B56) that conceals its secrets by *hiding in plain sight* (cf. the beginning of the fragment: οἱ ἄνθρωποι πρὸς τὴν γινῶσιν τῶν φανερόν παραπλησίως Ὀμήρωι, etc.)—until one recognizes that the real answer to the riddle is not “lice” but “nothing at all”: the lice are a mere gimmick, a nonexistent object, that is concocted on the spot to fool Homer (and us) into looking in the wrong place, i.e., for a solution to a purported riddle. Heraclitus quotes the riddle to show how Homer is physically and mentally blind. See Porter 2021: 90. “Unapparent” (ἀφανής) in B54 serves much the same purpose for Heraclitus’ readers: it is a false lure, as are all of his so-called riddles.

to analogize Heraclitus' sentences to the "book" of nature, as I believe we must, we will have to recognize that nature, too, is an unreadable and untranslatable text.<sup>134</sup>

The most immediate target of Heraclitus' dictum in B54 could be the language in which Heraclitus expresses himself, his own meanings, which are by his own admission recessed, harder to make out, but also more rewarding. But since his meaning in turn targets the logic of the universe—more than targets, because it maps directly, if imperfectly, onto that reality—the term "*harmonie*" is perfectly chosen. The words that he utters fit together in much the same way as the world of nature fits together, not in a one-to-one correspondence, but in an analogical fashion. Both display relations (convertibility, reversibility, tension, inconcinnity, and plurisignification rather than ambiguity alone), but they do so with different materials (nouns, verbs, letters, and sounds; material and phenomenal features or entities like warm, cold, earth, *psuchē*) that share a kind of syntax and a logic of relation that is captured by the word *logos*.<sup>135</sup> An essential point of Heraclitus' teaching is that what he says has validity even in his absence. The logic that he indicates lives out its existence independently of himself and his words and, so too, independently of all words. That is the clear import of a fragment quoted earlier (B50): "liste[n] not to me but to the *logos*," where *logos* is best understood as an appeal to the logic of the real.<sup>136</sup> What the *logos* of nature reveals is that "all things are one" (ἐν πάντα εἶναι, B50). This, too, is an instance of back-turned *harmonie*, a fitting-together of different and discordant levels of statement and fact: all things are one and that which is one is all things.<sup>137</sup> The statement is a palindrome that changes meaning depending on which direction the eye travels.

*Harmonie*, then, is not "harmony." It does not pick out a harmonious condition, though this is how modern scholars tend to understand the term.<sup>138</sup> Rather, it is grounded in conflictual relationships and processes. It is a disorderly and disordered (dis)harmony, a *rerum concordia discors*, whereby the accent is placed

134. Contrast Mourelatos 2021: 87: "Heraclitus is the first to have introduced and exploited the metaphor of the *liber naturae*, of the universe as a script that has to be properly parsed and read."

135. See n.124 above.

136. See n.66 above.

137. We could say that nature is a "singular plural." For the concept, see Nancy 1996: 48, who writes, "Being singular plural (*Être singulier pluriel*): these three words placed in apposition without any determined syntax—*being* is a verb or noun; *singular* and *plural* are nouns or adjectives and can be arranged in different combinations—at once mark an absolute equivalence and its open articulation, irreducible to an identity. *Being* is singular and plural at one and the same time. . . . It is singularly plural and plurally (*pluriellement*) singular" (trans. mine). The syntactical approach and the underlying thought are strongly reminiscent of Heraclitus, however unwitting the connection.

138. Diels 1901: vi is typical: in Heraclitus, all aspects of his thought and of the world it encompasses "are woven together in a grand harmony (*in eine große Harmonie*) in which all earthly contradictions and dissonances (*Mißtöne*) are resolved (*sich auflösen*)."<sup>138</sup> A better alternative is given by Barnes 1982: 61: "each [opposing pair] was locked in internecine strife, and their harmonious com-  
presence is not a thing to be expected."



on *rerum* (things) and not on the human perspective.<sup>139</sup> The emphasis here and throughout is on *tension*, *strife*, and *division*. These are what comprise the *harmonie* of things, which is anything but a “harmony.” B80 states this baldly:

εἰδέναι δὲ χρὴ τὸν πόλεμον εἶναι ξυνόν, καὶ δίκην ἔρι, καὶ γινόμενα πάντα κατ’ ἔρι καὶ χρεῶν.

It is necessary to know that war is common and right [or “justice”] is strife and that all things happen by strife and necessity. (KRS 211)

The apparent amorality of Heraclitus offends some scholars,<sup>140</sup> but Heraclitus is truly thinking beyond good and evil when he imagines “strife” as the universal condition of change and of nature.<sup>141</sup> “War is the father of all and the king of all” (B53), and as such is the “universalized” image of the tensions pictured by the back-turned bow.<sup>142</sup> Interestingly, B80 repeats the same tensions in its *progressus* from the necessity that is ours (χρή) to that which is nature’s (χρεῶν). One of these elements in tension is “strife” in the guise of “war,” even though strife, like war, is the name *for* these tensions.

B8 gives us a better handle on the logic of the Heraclitean world:

τὸ ἀντίξουν συμφέρον καὶ ἐκ τῶν διαφερόντων καλλίστην ἁρμονίαν καὶ πάντα κατ’ ἔρι γίνεσθαι.

Heraclitus says that what is opposed is convergent, that from divergent things comes the finest attunement [or “fitting-together”] (*harmonian*), and that *all things come about through strife*.

B10 is more radical still:

συνάψεις ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συναῖδον διαῖδον, καὶ ἐκ πάντων ἐν καὶ ἐξ ἐνὸς πάντα.

139. Following Benjamin 1996, we might say that nature speaks the language of things, not of man. See further Porter 2022: 15 at n.26, citing Emlyn-Jones 1976: 88 and Rivier 1956.

140. E.g., Vlastos 1955: 367, addressing B102 (“For god all things are fair and good and just”), “which, if true, would be fatal for all morality.” Emlyn-Jones 1976: 106 endorses Heraclitus’ cosmic amorality, but insists that moral values obtain on the human plane and are accordingly not “illusory.” Differently, Long 2013, who sees in the bounded structure of the Heraclitean universe a model of rationality and of ethical measure that is potentially mirrored in the human mind.

141. This reading of strife is accepted by Vlastos 1955: 356–58 and by Emlyn-Jones 1976, among others. Emlyn-Jones insists, however, that opposing forces produce “equilibrium” and balance (110), and that “[t]he opposites are identical.” (Cf. also Diels 1906: vi, in a quasi-Nietzschean mood.) But opposites can never fully be identical if they are to remain opposed, nor can they resolve into anything but a dynamic yet unstable equilibrium.

142. Emlyn-Jones 1976: 110.

Conjoinings [are] *wholes and not wholes*, converging diverging, in tune out of tune [“consonant dissonant”]; out of all things one, and out of one all things.<sup>143</sup>

“Conjoinings” renders συνάψεις, which indicates a point of contact and a binding-together of things. The alternative manuscript reading is συλλάψεις, which has a similar meaning, though to some scholars the word suggests an agent, be it human or divine, that has produced the connections in its mind. But there is no need to introduce any kind of agent here any more than where Heraclitus says that “cold things get warm” and vice versa: they merely “change” from one state to the other (B126; cf. A10).<sup>144</sup> The world is a self-organizing and self-disorganizing fabric of converging and diverging strands or, as he says in B10, a harmony (*harmonīē*) that is simultaneously in and out of tune, fitting and not fitting together, a unity that is a plurality, differing and agreeing with itself at one and the same time (B8, B10, B51). Neither whole nor not-whole, the cosmos is simultaneously whole *and* not-whole, an untotalizable sum that is forever alive and forever dying, exhausting and replenishing itself at every instant, in every entity, and with every transformation, not sequentially but simultaneously.<sup>145</sup> It is not made, but simply is, forever (B30). Finally, Heraclitus’ word for “one” is ἓν, which is often rendered with “unity.” But “unity” introduces a foreign element into the thought. The world cannot be a unity. It is a disharmonious harmony or a harmonious disharmony.<sup>146</sup>

Likewise, there is nothing to suggest that unity produces plurality (“all things”) or that all things reduce to unity. Instead, we find an oscillation or a dialectical

143. I have combined and modified the translations of KRS 203 and D47.

144. The full fragment reads: τὰ ψυχρὰ θέρεται, θερμὸν ψύχεται, ὕγρὸν αὐαίνεται, καρφαλέον νοτιέται. The reference is to cosmic processes of change that, we might say, are presented as purely verbal events (as the verbs of nature’s doings). Emlyn-Jones 1976: 109 rightly pushes back against the subjectivizing reading of B10 that is introduced by Kirk 1962: 168.

145. The model of a synapse suggests itself (see Decker 2015, who oddly overlooks συνάψεις in B10), but the model is too static to capture the volatility of nature that is operative in Heraclitus. Like most scholars, Decker insists on an underlying foundation that is “unalterable through its apparent permutations” (175). In my view, the very core of Heraclitean nature is itself volatile, changing, and dynamic; it is an assemblage of relations that are themselves never fixed but are always in process.

146. Hegel caught some of these implications with his observation that “the simplex (*das Einfache*), the repetition of a single note, is not a harmony. Harmony entails difference; it must essentially and absolutely be a difference. This [sc., Heraclitus’] harmony is precisely absolute Becoming, Change,” which is why “contraries and opposites” are the essential property of harmony and why difference (strife) is the motive force in the universe: “In Heraclitus, the moment of negativity is immanent; that is what the whole of his philosophy is about” (Hegel 1971: 327, 326). Counterintuitively, it is *differentiation* that makes the process one of “vitality” (*Lebendigkeit*), and so too of irreducible complexity (326–27). But this in line with Heraclitus’ own views. See further Dennett 1991: 49–50 and the experimental research that he cites confirming Hegel’s insight into notes being audible only against the background of a musical register (harmony in the Heraclitean sense), and adding an equally crucial observation about overtones (harmonics) that, all but inaudible, are integral to the detection of single notes, much like the tensions in the non-word ΒΙΟΣ in B48 that are less heard than overheard.

process—a constant vibration—that moves between two extremes, those defined by the one and the many. That is why statements like “the whole is X” are forbidden in Heraclitus’ thought, not only because some entity that we call the whole eludes predication but, more crucially, because *there is no whole*. There is only lifedeath, eternally at odds with itself.

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