

How do we know that by «separated» Heraclitus meant «distinct»? In the first place, it is utterly inconceivable that the term could, at that early time, have been used in the technical sense in which Aristotle employs it when discussing the «separation» of the intelligible ideas from the objects of sense. In the second place, we find that Anaxagoras uses the very same form of the same word simply in the sense of «not mixed up with». These are his own words: «In this one world things are not separated from each other, nor hewn asunder by a hatchet, neither the Warm from the Cold nor the Cold from the warm»⁽¹⁾. He then goes on to explain that Thought, in a certain sense, is an exception. It, indeed, is not mixed up with all the other things, but is «all by itself»⁽²⁾, although, nevertheless, «in some things», «namely in the beings capable of thought, «a share of it» may yet be found⁽³⁾, and even in so far as it is «by itself», it yet is «just where all other things are too», namely in undifferentiated as also in differentiated matter⁽⁴⁾. In Anaxagoras, then, there is, indeed, a definite, but rather unsuccessful effort to work out the concept of the «transcendent» which, however, he is, as yet, unable to disentangle from the more concrete and more primitive notion of spatial separation. In Heraclitus who does not admit any fundamental distinction between different kinds of matter, the ideas of their being «mixed up» or «not mixed up» with each other must be discarded altogether and «separated» can only mean «distinct». His discovery, then, was simply this: whereas his predecessors had distinguished but between «the Warm» and «the Cold», or «the Moist» and «the Dry», Heraclitus contended that «the Wise» (this, really, is the expression he uses) is something different from them all: the thinker who endeavours to analyze nature must take into account not merely semi-material factors like Heat and Cold, Moisture and

(1) Οὐ χωρίζεται ἀλλήλων τὰ ἐν τῇ ἐνὶ κόσμῳ οὐδὲ ἀποκέκοπται πελέκει οὔτε τὸ θερμὸν ἀπὸ τοῦ ψυχροῦ οὔτε τὸ ψυχρὸν ἀπὸ τοῦ θερμοῦ. (Anaxagoras Frg. 8).

(2) Anaxagoras Frg. 12.

(3) Ἐν παντὶ παντὸς μοῖρα ἔνεστιν πλήν νοῦ, ἔστιν οἷα δὲ καὶ νοῦς ἐνι. (Anaxagoras Frg. 11).

(4) Ὁ δὲ νοῦς . . . καὶ νῦν ἐστὶν ἵνα καὶ τὰ ἄλλα πάντα . . . (Anaxagoras Frg. 14).

Dryness, but also Wisdom, the power that orders them all and makes them conform to a definite plan or scheme.

It can hardly be doubted that he vested wisdom in fire and assumed it to inhere in this universal element, since he pronounced «the dry soul» to be «the wisest and the best»⁽¹⁾, and accounted for the stultifying effects of drunkenness by pointing out that the drunken man's soul «has got wet»⁽²⁾. But that does not dispose of the much more delicate question whether, or rather to what extent, he supposed wisdom to imply something like mind, or consciousness, or even personality. On the one hand, he seems to identify wisdom with «insight» (to have understanding means «to understand the One which is wise, insight that steers all things throughout»⁽³⁾). On the other hand, the fact that, in order to designate it, he makes use of the neutral gender («*the* Wise») tells powerfully against any personalistic interpretation. As if to add to our embarrassment, Frg. 32 reads thus: «The One which alone is wise does not wish, and (*yet*) does wish, to be called by the name of Zeus»⁽⁴⁾. It is easy to see why Wisdom wishes to be called *Zeus*, since it «steers all things throughout», as Zeus is commonly supposed to do. It is much less easy to see why it objects to this designation. Is it merely because no proper name is appropriate to it? Indeed, in some important fragments «God» is referred to, but «Zeus» never is. Furthermore, in one passage where we might expect a mention of Zeus, his symbol, the thunderbolt, is named instead⁽⁵⁾; and in another his epithets «father and king of all things» is transferred to War⁽⁶⁾. But in one of the two fragments in which «God» is referred to in this specific sense the philosopher is evidently not thinking of Wisdom, but of Fire, or of the universe⁽⁷⁾, and hence it is probable that the

(1) Αἴη ψυχὴ σοφωτάτη καὶ ἀρίστη. (Heraclitus Frg. 118).

(2) . . . ὑγρὴν τὴν ψυχὴν ἔχων. (Frg. 117).

(3) . . . ἐν τῷ σοφὸν ἐπίστασθαι, γνώμην ὅτι ἐκυβέρνησε πάντα διὰ πάντων. (Frg. 40/41). Comp. Zeitschrift f. d. oesterr. Gymnasien, 1910, S. 966.

(4) Ἐν τῷ σοφὸν μόνον λέγεσθαι οὐκ ἐθέλει καὶ ἐθέλει Ζηνὸς ὄνομα. (Frg. 32).

(5) Τὰ δὲ πάντα οὐκίσει κεραυνός. (Frg. 64).

(6) Πόλεμος πάντων μὲν πατήρ ἐστι, πάντων δὲ βασιλεύς . . . (Frg. 58).

(7) Ὁ Θεὸς ἡμέρη εὐφρόνη, χειμῶν θέρος, πόλεμος εἰρήνη, κόρος λιμός. (Frg. 67).

other ought to be interpreted in the same way⁽¹⁾. In other words, it would seem that it is «everliving Fire» that is termed «God» when viewed as possessing, or being the vehicle of, wisdom, whereas the neutral term Wisdom (or rather «the Wise») is employed when the order, or plan, or scheme to which the universe conforms is referred to. Hence, Wisdom probably objects to the name «Zeus» because it is conceived rather as impersonal cosmic rationality than as a divine person.

What then is the nature of this cosmic scheme? Which are the features of the universe that reveal it and which convince us that its order and structure are planned by, and due to wisdom? Here we are on safer ground and can say with reasonable assurance that two such features may be distinguished, although closely connected with each other.

2. In the first place, the world consists of pairs, or couples, of opposites and these opposites, in every single instance, are, although contradictory, yet ultimately identical. As a first approach to the understanding of this paradox, we might perhaps say that, according to Heraclitus, the world is built upon a symmetrical pattern (right and left, up and down; day and night, summer and winter) and that these symmetrical counterparts conspire to produce an effect of order, regularity and beauty, or, as the philosopher preferred to call it, *harmony* — a term which, at that time, was still used in its original meaning of mutual adjustment and attunement. «Running counter to each other they convene and it is from disagreement that the best agreement springs»⁽²⁾. «They do not understand how what diverges may yet be in agreement with itself: reconverging adjustment, as in (*the shape of*) the bow and the lyre»⁽³⁾. «Occult attunement better than manifest»⁽⁴⁾. «To be joined

(1) Τῷ μὲν θεῷ κατὰ πάντα καὶ ἀγαθὰ καὶ δίκαια, ἄνθρωποι δὲ ἅ μὲν ἄδικοι ὑπειλήφασιν ἅ δὲ δίκαια. (Frg. 102).

(2) Τὸ ἀντίξουν ξυμφέρων καὶ ἐκ διαφερόντων καλλίστη ἁρμονία. (Frg. 8). In the case of this fragment and of some of those that follow a literal translation appeared to be still less practicable than in most other cases. The term *convene* was used in order to render, at least to some extent, the double meaning of συμφέρων (what *meets* and what is *convenient*).

(3) Οὐ ξυνιᾶσιν ὅπως διαφερόμενον ἑαυτῷ ὁμολογέει· παλίντροπος ἁρμονία ὅκωσπερ τόξου καὶ λύρης. (Frg. 51).

(4) ἁρμονία ἀφανῆς φανεροῆς κρείττων. (Frg. 54).

together: the entire and the fragmentary, the convening and the diverging, the consonant and the dissonant, and out of all (emerges) One and out of One they all (emerge)»⁽¹⁾. «For God all things are right, and good, and just; men however have supposed some to be just and others unjust»⁽²⁾.

Sometimes opposition and contradiction are personified and termed *War* or *Discord*. They are thus hailed, not merely as indispensable conditions of order and beauty, but also as *agonistic* principles or, as we should say, as principles of competition and even, to a certain extent, of natural selection. «War is the father of the universe and its king: he has revealed some as gods, others as men; of some he has made slaves, and freemen of others»⁽³⁾. Heraclitus inveighed against Homer on account of the verse: «Oh, that Discord would disappear from among gods as well as men». For there would be no harmony without the contrast of High and Low, nor living beings without the contrast of Male and Female; indeed, the universe would be exploded⁽⁴⁾. And such a wish was particularly absurd and even nefarious in Homer who, being a rhapsodist, could hope to win fame solely by emerging triumphant from the contests in poetry and music. Consequently, «he ought to be banned from the games and flogged»⁽⁵⁾. But his case is a good illustration of the truth that «men would not be better off if all their desires were fulfilled»⁽⁶⁾.

As far as these considerations go, Heraclitus might well be said to have discovered a law of universal *polarity*. But this term does not cover his entire conception. He did not hold the opposites to be merely symmetrical counterparts; he conceived them, moreover, as *identical* in a still stricter sense. For this his favorite contention Heraclitus gave a long list of illustra-

(1) Συνάψιες ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συνᾶδον διᾶδον, καὶ ἐκ πάντων ἓν καὶ ἐξ ἑνὸς πάντα. (Frg. 10).

(2) Frg. 102, comp. p. 61, note 1.

(3) Frg. 53. Beginning in note 6, p. 60. Then: καὶ τοὺς μὲν θεοὺς ἔδειξε, τοὺς δὲ ἀνθρώπους, τοὺς μὲν δούλους ἐποίησε, τοὺς δὲ ἐλευθέρους.

(4) Heraclitus A 22 Diels-Kranz.

(5) Τὸν τε Ὅμηρον ἔφρασκε ἄξιον ἐκ τῶν ἀγῶνων ἐκβιάλλεσθαι καὶ ραπίζεσθαι... (Frg. 42).

(6) Ἄνθρωποις γίνεσθαι ὀκόσα θέλουσι οὐκ ἄμεινον. (Frg. 110).

tions. These seem to fall under different heads according to the viewpoints adopted. But we must be careful to realize that these viewpoints, familiar as they may be, and significant as they may appear to us, evidently meant nothing to Heraclitus by themselves: to him they were just different illustrations of one and the same fact—the identity of opposites—and most likely he was not even aware of their difference.

In one case a modern interpreter feels inclined to assume that the philosopher simply made use of a pun. The Greek noun *bios* means *life* when the accent is on the first vowel; when it is on the second, its meaning is *bow*. Hence, «the bow's name is Life, but its effect is Death»⁽¹⁾. But I feel assured that Heraclitus supposed this to be an entirely serious argument: in a certain sense Life and Death *coexist* in the bow: the former reveals its presence by the name, the latter by the effect; how could this be, if both were not, at bottom, the same?

In many other cases we might feel tempted to assume that what Heraclitus presents as identity of opposites is simply relativity of predicates: an object exhibits different properties when considered in its relations to different other objects because its effects on, or its response to these is different. «Sea-water is perfectly pure and definitely sullied: to fishes it is drinkable and life-preserving, whereas to men it is undrinkable and deadly»⁽²⁾. To an ass chopped straw is preferable to gold; pigs use filth for cleaning purposes and hens bathe in dust or ashes⁽³⁾. The most beautiful of apes appears ugly when compared with the human race; and the wisest of men will turn out to be but an ape by the side of a god with respect to wisdom, beauty and everything else; indeed, a man must be pronounced childish by the side of daemons, just as a boy by the side of men⁽⁴⁾. In a circle the beginning coincides with the end; and the fuller's screw moves in a circle and in a straight line at the same time⁽⁵⁾. The way up and the

(1) Τῷ οὖν τόξῳ ὄνομα ΒΙΟΣ, ἔργον δὲ θάνατος. (Frg. 48).

(2) Frg. 61.

(3) Frg. 9 and 37.

(4) Frg. 82, 83, 79.

(5) Frg. 103 and 59.

way down are one and the same. When we enter a river twice, it is the same and not the same, and so are we⁽¹⁾. «Good and Bad are the same. Thus surgeons who cut and burn the patients and torment them badly in every way (*yet*) complain not to receive adequate payment from them for acting in this way»⁽²⁾. But surely, Heraclitus was not interested in relativity as such: he is far from saying that the surgical operation is bad *in one respect* and good *in another*. His conclusion, and, indeed, his point, is that Good and Bad are *the same*. He does not distinguish between an object and its properties in the way we do. Where there is goodness, there must be a *good thing*; and a *bad thing* where there is badness. Now, in all the above instances, goodness and badness could be traced in one and the same thing; consequently, the good thing and the bad thing were identical; hence, Good and Bad themselves were identical likewise. That is not our logic, but it was the logic of the early fifth century. Or rather, thinking, at that time, was conditioned by another set of categories. Then, as now, a property was assumed to inhere in the object; but whereas we consider it as something variable and comparatively short-lived, it was by those early thinkers felt to be an element of its unchanging essence.

In another group of cases the opposites are presented as mutually conditioning each other—either subjectively, inasmuch

(1) *Fr.*g. 49a and 12.

(2) Οἱ γοῦν ἰατροὶ τέμνοντες, καίοντες, πάντα βασανίζοντες κακῶς τοὺς ἀρρώστούοντας ἐπαιτιῶνται μηδὲν ἄξιον μισθὸν λαμβάνειν παρὰ τῶν ἀρρώστούων ταῦτα ποιησάμενοι. (*Fr.*g. 58). This is the reading of the manuscripts and there is no cogent reason for departing from it. Evidently, if the surgeons hold the payment they mostly receive to be inadequate, they must be convinced that, by illtreating the patient, they have, at the same time, conferred a great boon upon him which is just what had to be proved. If, however, we alter one letter (reading ἄξιοι for ἄξιον), we get a simpler and therefore still more satisfactory meaning: . . . yet are not rebuked and (even) held to deserve payment . . . » (ἐπαιτιῶνται μηδὲν, ἄξιοι μισθὸν λαμβάνειν). Utterior alterations that have been proposed and generally accepted and which make the author say that the surgeons do *not* deserve payment (μηδὲν ἄξιοι μισθὸν λαμβάνειν) appear to be absurd, since this would *disprove* what ought to be proved, namely that their treatment is at the same time an evil and a good. Comp. *Zeitschrift f. d. österr. Gymnasien* 1910. S. 970.

as one cannot be felt to be what it is but by its contrast to the other; or objectively since the essence of each, or at least of one, is just to be the negation of the other. «They would not have known (*or rather* come to fear) the name of Justice, if this (*namely injustice*) did not exist»⁽¹⁾. «Sickness makes health enjoyable and good, hunger satiety, strain rest»⁽²⁾.

When we generalize the law of polarity and apply it to the universe, we shall see that its bi-polar structure really points to a fundamental unity: since all opposites are essentially one, the universe comprizing them all must ultimately be one too. But whence does the appearance of difference and plurality, whence does the fact of polarity itself arise? In a famous passage Heraclitus strove to clarify this point. But the solution was hardly satisfactory and unfortunately even the wording is somewhat doubtful. But the philosopher's main thought would appear to have been that all things are substantially one and that all apparent differences, or even contradictions, are but of a secondary and perhaps even arbitrary nature. «God is day and night, winter and summer, war and peace, satiety and hunger. But he is differentiated (*just*) as, when he (?) is mixed up with (*different kinds of*) incense, he may be named according to each man's pleasure (?)»⁽³⁾. It is

(1) Δίκης ὄνομα οὐκ ἂν ἤδεσαν (or rather ἔδεισαν which is nearer to the manuscript-reading ἔδησαν), εἰ τοῦτο μὴ ἦν. (Frg. 23).

(2) Νοῦσος ὑγιεινὴν ἐποίησεν ἡδὺ καὶ ἀγαθόν, λιμὸς κόρον, κάματος ἀνάπαισιν. (Frg. 111).

(3) Ὁ θεὸς ἡμέρη εὐφρόνη, χειμῶν θέρος, πόλεμος εἰρήνη, κόρος λιμὸς ἀλλοιοῦται δὲ ὅκωσπερ ὅπότεν συμμιγῆ θυσίμασιν, ὀνομάζεται καθ' ἡδονὴν ἐκάστου. (Frg. 67). After ὅκωσπερ the word πῦρ is now mostly inserted. It is doubtful whether, that is indispensable, for to Heraclitus God and Fire ultimately meant the same and even ἀλλοιοῦται («is differentiated») could hardly be predicated of God in the strict sense of the term. But it is more important to determine the precise meaning of the simile. It is usually supposed that the philosopher is referring to the fact that fire, or rather smoke, is designated differently according to the kind of incense burned and hence the words καθ' ἡδονὴν ἐκάστου are assumed to mean: according to the odor of each kind (although there is no other instance of ἡδονή being used in the sense of *scent* instead of that of *flavor*). But it is not easy to understand how, if this were correct, the simile could apply to the cosmos. The incense is different from and independent of the fire; hence, it makes sense to say that the latter is

not really surprising that this should sound unsatisfactory, for, after all, every monist must feel some embarrassment when called upon to explain why there is any difference at all to be overcome and accounted for by monism. But at least we know, to some extent, what, to Heraclitus, appeared to be the ultimate essence and nature of differentiation.

β. «There is one and the same within: living and dead, and awake and asleep, and young and old: for the latter are turned into the former and these, again, into the latter»⁽¹⁾. Identity, then, is ultimately deducible from the phenomenon of mutual convertibility: the living could not *become* the dead, nor the waking man a sleeper, or the young man old, if all these were not, after all, the same since, as was shown already, according to the categories implicitly adopted at the time, properties were supposed to be as unchanging as substances were later on.

This fact of convertibility, as proof of identity, is illustrated by some other fragments also. «(It is)» cold things that become warm, the warm becomes cold; the wet becomes dry and the arid moist»⁽²⁾. Heraclitus further assumed that human souls when rising upward and thus becoming hotter are turned into gods and that, conversely, daemons when dropping down on earth and thereby becoming cooler are again turned into human souls, and in this sense he said: «Immortals are mortals, mortals immortals: our life (*implies*) the death of gods, our death

designated by different names according to the different kinds of the former. But what is there, according to Heraclitus, in the universe different from and independent of God? Therefore, it would seem more likely that he had in mind the case of fire consuming different kinds of incense at one and the same time. In this case, he would then have meant to say, it is arbitrary by which of the corresponding names to designate the fire: each of them may be used «according to each man's pleasure» (καθ' ἡδονὴν ἑκάστου). And in the same way we may apply to God the names Day or Night; Winter or Summer; War or Peace; Satiety or Hunger «as we please»: all are equally justified because, after all, there is no real difference in God corresponding to this difference of names.

(1) Ταῦτό τ' ἓνι ζῶν καὶ τεθνηκὸς καὶ ἐγρηγορὸς καὶ καθεῦδον καὶ νέον καὶ γηραιόν· τάδε γὰρ μεταπεσόντα ἐκεῖνά ἐστι κάκεινα πάλιν μεταπεσόντα ταῦτα. (Frg. 88).

(2) Τὰ ψυχρὰ θερεται, θερμὸν ψύχεται, ὑγρὸν αἰθαίνεται, κορυφαλέον νοτίζεται. (Frg. 126).

(*implies*) their life»⁽¹⁾. Hesiod whom most people acknowledge as their teacher did not even know the nature of day and night, since he distinguished them: «for they are one»⁽²⁾, most likely because they too turn into each other. And even so with winter and summer, war and peace, hunger and satiety. In short, change, everywhere, expresses convertibility, and convertibility presupposes identity.

Furthermore, the basic nature of change is clearly set forth in a fragment already alluded to: «This order of things . . . was made neither by any god nor by any man, but ever was, is and will be: everliving fire, kindled according to measure and extinguished according to measure»⁽³⁾. All changes whatsoever, then, move, as it were, in one and the same dimension or, we might say, have a common denominator; they represent either an intensification or a relaxation of cosmic heat. In day, in summer, in war, in hunger, in life, in waking, in youth, in gods it is intensified: fire blazes forth; in night, in winter, in peace, in satiety, in death, in sleep, in old age, in men it relaxes: fire burns down. All change means a transition from the blazing flame to the glimmering embers, or vice versa.

But here we are confronted with yet another and perhaps an even more significant conception: intensification and relaxation of fire are said to take place *according to measure*⁽⁴⁾, that is, in conformity with certain definitive numbers or ratios. And we may add at once that these «measures» were, in all probability, by Heraclitus declared to be «ordained», i. e. determined once for all⁽⁵⁾. Here, a certain influence emanating from the Pythagoreans may perhaps be traced. At any rate, Hera-

(1) Ἀθάνατοι θνητοί, θνητοί ἀθάνατοι, ζῶντες τὸν ἐκείνων θάνατον, τὸν δὲ ἐκείνων βίον τεθνεῶτες. (Frg. 62).

(2) . . . ἔστι γὰρ ἓν. (Frg. 57).

(3) Frg. 30. Comp. p. 51, note 1.

(4) . . . ἀπτόμενον μέτρα καὶ ἀποσβεννόμενον μέτρα. (Frg. 30).

(5) Ἔστι γὰρ εἰμασμένα πάντα. (Frg. 137). That the term occurred in a discussion of μέτρα appears from Aetius (Heraclitus A 8 Diels-Kranz). Nor is there any reason for suspecting the authenticity of the quotation. εἰμασμένα is the manuscript reading in Aeschylus, Agamemnon 913. That it was not arbitrarily inserted by a Stoic author is shown by the consensus of pre-Stoic evidence (Diogenes Laertius IX 8: Heraclitus A 5 and A 8 Diels-Kranz: comp. Hermes 58, S. 51 sqq.). And Kranz

clitus indulged in some quaint numerical speculations centering, as it would seem, mainly around the number Seven which he held to be of paramount significance not only in the realm of the heavenly bodies, but no less in human life, admitting, however, that it does not always reveal itself in its own guise, but is to a large extent represented by the number Thirty—this being, as he contended, derivable, in a way as artificial as it was ingenious, from Seven⁽¹⁾. But by the «measures» dominating the cosmic process he appears to have meant something more tangible and less fantastic. From one fragment it is evident that «measure» sometimes stood for a definite quantitative ratio. When, in the process of gradual «extinction», fire has been turned into ocean, then *half* of ocean turns into earth and the other half into flame; and when, in a subsequent process

argument that «there are no quotations from Heraclitus in Aetius» (who quotes the sentence) is a curious one, since here we have such a quotation (γράφει γούν). A unique phenomenon must never be denied just because it is unique.

(¹) According to Frg. 126a Seven «is divided» among the Greater and the Lesser Bear (each consisting of 7 stars) but may also be «figured out» with respect to the moon «according» to the ratio of periods» (κατὰ λόγον δὲ ὥρεων συμβάλλεται ἑβδομάς κατὰ σελήνην, διαίρεται δὲ κατὰ τὰς ἄρκτους...). How did he «figure» that «out»? The lunar period covers 30 days. Now we learn that Heraclitus (A 19 Diels-Kranz) determined a «generation» as consisting of 30 years, using the curious argument (comp. H. Fraenkel, Am. Journal of Philology Jan. 1938) that within such period a man may become a grandfather, or rather as he is said to have expressed himself, «complete a circle of generation», inasmuch as his son might possibly in his turn become a father. And this argument he developed by pointing out that a man might beget a son at the age of 14 so that he would be 15 when the son was born; and it would then take this son another 15 years to become a father. Hence, the 30 years of a «generation» are «figured out» to be equal to 2. (2.7 + 1). Now, applying this strange calculus to the moon Heraclitus probably «figured out» that the 30 days of her period were equal to 2.7 days of waxing plus 1 day for the full moon plus 2.7 days of waning plus 1 day for the new moon, so that the «ratio of periods», may here too be expressed by the formula: $30 = 2. (2.7 + 1)$. Moreover, Heraclitus also ascribed cosmic significance to an astronomic period (by many termed the «Great Year») which he supposed to consist of 10,800 solar years — which means after all, that it would comprise 360 months (or periods of 30 days each), just as the solar year comprises 360 days (Heraclitus A 18 Diels-Kranz).

of gradual «kindling», earth is reconverted into ocean, then this is «measured» so as to conform to «the same ratio that had obtained before it became earth» (1). But another implication of the concept of «measure» was probably still more important:

«The sun will not overstep his measure. If he did, the Furies, the bailiffs of Justice, will find him out» (2). It is unlikely that this referred mainly to the sun's orbit. The job of the Furies is, after all, to avenge murder. Why should they interfere, if the sun merely deviated from the road prescribed to him? Another interpretation is called for. According to Heraclitus it is «the periods that bring everything about» (3). Surely, it did not escape him that the opposites, such as day and night, winter and summer, waking and sleeping, youth and old age, do not alternate irregularly and without any regard to definite measures of time. There is then, a definite time allotted to night as well as to day. But if the sun «overstepped his measure», that is, if he unduly prolonged day, he would, thereby, cut short the time to which night is entitled, just as the murderer cuts short the lifetime of his victim. This, evidently, is why Justice would have to interfere and to call upon the Furies to avenge his misdeed. The «laws» of nature in the physical sense are at the same time «laws» in the political sense. But what is here explicitly said about day and night, must have referred to winter and summer, youth and old age, and, indeed, to all pairs of opposites as well. Although every one of them is inseparably bound up with its counterpart, yet they do not simply *coexist*; they *alternate*, or rather they *prevail alternately*, according to definite ratios of time. This is why fire may be said to be kindled and extinguished *according to measure*. The cosmic process conforms to a definite *rhythm*

(1) ... θαλάσσης δὲ τὸ μὲν ἡμισυ γῆ, τὸ δὲ ἡμισυ πρηστῆρ ... θάλασσα διαχέεται καὶ μετρέεται εἰς τὸν αὐτὸν λόγον ὁκοῖος πρόσθεν ἦν ἢ γενέσθαι γῆ. (Frg. 31).—Why should just *half* the ocean be turned into earth? Perhaps for no other reason than that evaporation had also to be accounted for and that both processes appeared to be equally significant.

(2) Ἡλιος οὐχ ὑπερβήσεται μέτρα· εἰ δὲ μή, Ἐρινύες μιν, Δίκης ἐπίκουροι, ἐξευρήσουσιν (Frg. 94).

(3) Ἔλαται, αἶ πάντα φέρουσιν (Frg. 100).

as essential to the world-scheme of wisdom as the bi-polar structure of the universe.

The preceding sketch has left some important and, in part, obscure sections of Heraclitus' system out of account, such as his epistemology⁽¹⁾, his theology and his eschatology. What has been said may be summed up in the following theses:

1. The substance underlying the universe was conceived by Heraclitus to be fire, but fire rather in the sense of heat than in that of flame and held to be, at the same time, identical with soul, namely, with the principle of life and thought.
2. That he taught universal «flux» is true only in the sense that he defined the cosmic process as a continuous «blazing forth» and «burning down» of fire.
3. That he proclaimed a divine Logos, or Reason, as presiding over all change and Becoming is a Stoic mis-interpretation.
4. What he did assert was that in order to account for the structure and the phases of the universe we must assume there is wisdom vested in fire and expressing itself in a universal world-scheme, two features of which he emphasized.
5. The first is the bi-polar structure of the cosmos: it consists of pairs of opposites mutually conditioning each other which, since each of them is always convertible into the other, must be seen to be ultimately identical.
6. The second is the fact that these opposites prevail alternately, according to definite ratios of time, thereby imposing upon the universe a definite periodicity or rhythm. Thus it is mainly by polarity and rhythm that the wisdom inherent in the universe expresses itself.
7. Heraclitus was not a metaphysician, if by a metaphysician we mean a thinker who feels he is revealing entities and conditions removed from immediate experience: he contended, on the contrary, that they were all «manifest» — if only a man had an «Hellenic soul» capable of properly interpreting the data of sense-perception.

(1) Amply discussed by the writer, Wiener Studien 43, S. 115 sq.