

HERACLITUS

The Complete Fragments

Translation and Commentary

and

The Greek text

**William Harris
Prof. Emeritus
Middlebury College**

PREFACE

Heraclitus was born at Ephesus, apparently from a noble family connected with religious rites, but early retired from their social position and devoted himself to study and the development of his philosophical ideas. There are no specific dates to attach to his life, but he must have flourished about somewhere about 500 B.C. He is said to have written his thoughts out in a prose document, a very early use of prose for philosophy, of which only fragmentary quotations have survived as citations from later authors over the next fifteen hundred years. There is almost nothing more which we know about Heraclitus' personal life and identity.

This paper contains all the fragments which can authoritatively be ascribed to Heraclitus, following the listing in Diels-Kranz "Die Fragmente der Vorsokratiker" 5 ed. 1934, and reprints. The interpretative commentary is designed to explicate the often difficult wording of the Greek, rather than summarize the body of philological study which has been devoted to Heraclitus over the last two hundred years. The Greek is absolutely necessary for serious study of Heraclitus, and this edition with all the fragments in a topical order lets us look at Heraclitus in one, authentic location.

The thought of this Greek philosopher, whom Aristotle first called "The Obscure", has exerted an important influence on modern thinking about a wide variety of subjects, including religion, the nature of the universe, the concept of the continuum, and other points some of which have not yet been sufficiently fathomed. I encourage you to proceed with slow and careful reading.

THE WAY OF THE LOGOS

1. Although this Logos is eternally valid, yet men are unable to understand it -- not only before hearing it, but even after they have heard it for the first time. That is to say, although all things come to pass in accordance with this Logos, men seem to be quite without any experience of it - - - at least if they are judged in the light of such words and deeds as I am here setting forth according to its nature, and to specify how it behaves. Other men, on the contrary, are as unaware of what they do when awake as they are when asleep. (1)

*τοῦ δε λόγου τοῦ δ εόντος αἰεὶ ἀξύνετοι γίνονται ἄνθρωποι
καὶ πρόσθεν ἢ ἀκούσαι καὶ ἀκούσαντες τὸ πρῶτον.
γινομένων γὰρ πάντων κατὰ τὸν λόγον τόνδε, ἀπείροισιν
εοίκασι πειρώμενοι καὶ ἐπέων καὶ ἔργων τοιούτων, ὁκοίων
ἐγὼ διηγεῦμαι κατὰ φύσιν διαρέων ἕκαστον καὶ φράζων
ὅκως ἔχει. τοὺς δε ἄλλους ἀνθρώπους λανθάνει ὁκόσα
ἐγερθέντες ποιοῦσιν ὅκωσπερ ὁκόσα εὔδοντες
ἐπιλανθάνονται*

As soon as one starts to deal with the Greek and the sub-meanings of the original wording, the above translation becomes cloudy and perhaps weak. Yet it will serve as an entry text to serve as ancilla to the Greek, which has the true way into understanding the mind of Heraclitus.

It is interesting that Aristotle in discussing this passage, raises the grammatical question of whether the word "always" (aiei) goes with what is before it "the eternal Logos" or after it as "always fail to understand...". Arist. Rhetor. 1407b. But this is just the first of myriad questions about this fecund passage which has occupied the best classical and philosophical wits for centuries. Distinguishing things "according to the nature" sounds much like Aristotle's approach to data, starting from observation and use, rather than from ideal pattern; but is better aligned with use of the word Physis by the early philosophers.

2. We should let ourselves be guided by what is common to all. Yet, although the Logos is common to all, most men live as if each of them had a private intelligence of his own.

*τοῦ δε λόγου δ' εόντος ξυνοῦ ζῶουσιν οἱ πολλοὶ ὡς ἰδίαν
έχοντες φρόνησιν (2)*

3. Men who love wisdom should acquaint themselves with a great many particulars.

*χρη γαρ εὔ μάλα πολλῶν ἱστορας φιλοσόφους ἀνδρας
εἶναι (35)*

Heraclitus stresses particulars and Fact, but in the next statement he maintains that accumulations of fact do not confer Wisdom or gnomé. Why this odd difference of point of view? Because both are relevant and important; information is of course essential, but as it is assembled it becomes a static corpus and possible encumbrance to the Thinker and philosopher, even as a full philological documentation of opinions on these Fragments of Heraclitus can obscure the words of the statements.

4. Seekers after gold dig up much earth and find little.

*χρυσον οἱ διζήμενοι γῆν πολλὴν ορύσσουσι καὶ
εὕρισκουσιν ολίγον (22)*

What could be a better description of Mining, whether gold or uranium? ---- or the continuing processes of serious scientific research? Much labor, often no or few returns, that is the nature of the investigation of new ideas.

5. Let us not make arbitrary conjectures about the greatest matters.

μη εικῆ περι τῶν μεγίστων συμβαλλόμεθα

But the world is replete with arbitrary views, not only in the world of history, politics and theology, but forever in Academe where it they work against the nature of the search after truth. (47)

6. Much learning does not teach understanding, otherwise it would have taught Hesiod and Pythagoras, Xenophanes and Hecataeus. *πολυμαθίη νόον έχειν ου διδάσκει. Ησίοδον γαρ αν εδίδαξε και Πυθαγόρην αὐτις τε Ξενοφάνεα τε και Εκαταίον* (40)

Anyone who has spent time in higher-education will be painfully aware of the "learned views" which go nowhere and shed no light at all. All those "possible points of view..." which fills the pages of learned Journals crowd the path to Understanding. Yet knowing much is also something Heraclitus stresses, so we are caught between the jaws of ignorance and encyclopediasm.

7. Of those whose discourses I have heard there is not one who attains to the realization that wisdom stands apart from all else.

όκοσων λόγους ήκουσα ουδεις αφικνεϊται ες τουτο, ωστε γινώσκειν ότι σοφόν εστι πάντων κεχωρισμένον(108)

The problem of distinguishing Knowledge from Wisdom is with us forever. Our college courses teach knowledge of many things, but the wisdom which comes from education seems to be more of a personal and even spiritual nature than a result of accumulation and accreditation. Can students be denied a top grade because they lack wisdom, or is this considered an transcendental factor couched in mental talent or taught by experience in life?

8. I have searched myself.

εδιζήσάμην ἐμεωτόν(101)

These two words speak volumes. Self-examination is the hardest thing to do, something Freud had to learn slowly and he spent much of his life doing just this. It is not a simple truism that the unsearched life is not life at all.

9. It pertains to all men to know themselves and to be temperate.

*ἀνθρώποισι πᾶσι μέτεστι γινώσκειν ἑωτους και σωφρονεῖν
(116)*

10. To be temperate is the greatest virtue. Wisdom consists in speaking and acting the truth, giving heed to the nature of things.

σωφρονεῖν ἀρετὴ μέγιστη, και σοφίη ἀληθέα λέγειν και ποεῖν κατα φύσιν ἐπαίοντας(112)

The Greek word *sophrosune* is hard to define, since it comes from the adjective *saos* "safe" and *phron* "mind". It points to a mind which is well centered and thoughtful, balanced and poised for intelligent judgments. English "temperate" from Latin *temperatus* as "moderate" is much more complicated, going back to Latin *tempus* "time, the right time, season", and the English core of the word points to being in touch with an external situation, whether season, social setting, or proper time for a given action. But the English word has other associations, such as Temperance as avoidance of alcohol, Temper as ire and anger, Bach's well adjusted harpsichord playing well-tempered variations, and even the blacksmith carefully drawing the temper of overly hard quenched steel. The Greek has none of these external associations, it is self-centered and a business of the mind, which when held in a sane stance, will be the proper tool for thought.

11. The things of which there can be sight, hearing, and learning ---- these are what I especially prize.

ὅσων οψις ακοη μάθησις, ταῦτα εγω προτιμέω(55)

At first H. seems to be putting special emphasis on authentic observation, what the Greeks termed "autopsia" or direct fact-finding, something one himself sees. But he continues with the argument..... but.....

12. Eyes are more accurate witnesses than ears.

οφθαλμοι γαρ τῶν ὠτων ακριβέστεροι μάρτυρες (101a)

Visual information is more direct than hearing, by which he surely means "hearsay" rather than acoustic perception, but again

13. Eyes and ears are bad witnesses to men having barbarian souls.

κακοι μάρτυρες ανθρωποισιν ὀθαλμοι και ὠτα βαρβαχρους ψυχας εχόντων(107)

.....the best direct observation is worthless without the right mental grasp. One thinks of 17th c. drawings of planets as seen in a telescope, in which the rings were seen as separate brackets rather than a ring seen from an oblique angle. Until the mind is prepared, even the best optical observations are liable to misrepresentation. And in the case of "grossly uneducated minds" of the barbaroi, seeming facts based on eye, ear or hearsay are of little importance per se.

14. One should not act or speak as if he were asleep.

ου δεῖ ὡσπερ καθεύδοντας ποιεῖν και λέγειν (73)

We know about the curious phenomenon of Sleep Walking, but Heraclitus turns to something much more serious, which is Quasi-Sleep-Talking. The conscious and rational part of the mind is turned off as in sleep, but the words continue to flow; we go through motions and actions as if we were awake, but it is a kind of conditioned reflex. To really think about something is quite different from thinking that it is alright, that it will serve.

15. The waking have one world in common,

.....τοῖς εγρηγορόσιν ἓνα και κοινον κοχσμον εἶναι (89)

Each sleeper turns away to a private world of his own. Heraclitus precedes Jung in his notion of the sleep-world as a private chamber of the unconscious mind, a place which has an unclear connection with the waking world. Yet this is real to the sleeper, it is a world too..... but personal and private one.

16. Death is what we see when awake, when we are asleep it is dreams.

θάνατος εστιν ὀκόσα εγερθέντες ὀρέομεν, ὀκόσα δε εὐδοντες ὕπνος (21)

This curious remark must mean that the world of the living is continually in process of dying, everything we see in our daily lives is either coming into being or going out of being into death. But in our dream world, there is no death because dreams are unreal and do not face the problem of going out of being. One step further on this path might lead to Plato and his eternal idea world, imperishable and permanent, still taught in coursework in Academe, but already invalidated in the later 4th century.

17. Nature loves to hide itself

φύσις δε..... καθ' Ηρακλειτον..... κρύπτεσθαι φιλεῖ (123)

Anyone who has worked in scientific research knows well the thousand ways in which things disappear again and again just as they began to seem clear. It seems to be an almost intentional trickiness of the situation that layer after layer of camouflage must be removed before we can find what we are looking for. But this is not just in Science, it is the same in all phases of human thought and investigation.

18. The lord whose oracle is at Delphi neither speaks nor conceals, but gives signs.

ὁ ἀνάξ, οὐ το μαντεῖόν ἐστι το ἐν Δελφοῖς, οὔτε λέγει οὔτε κρύπτει ἀλλὰ σημαίνει(93)

Unfortunately the English "give signs" is quite different from the Gr. *semainein*, since it is used for hand signals, the directional indications of the policeman at the corner, or the "signing" system of communication of the deaf. The Greek word can be used for indicating with a word, an expression or a thought, and here it is used for the act of giving an interpretation. But if I translate "the oracle gives interpretations" that is again in the wrong direction, since it will be taken as speaking and oral messaging. The real point Heraclitus is making seems to be this:

The Oracle responds with indirect information rather than words, he intimates things rather than indicating them. So going to ask the oracle a question will give you a puzzle of some sort, relevant indirectly rather than a response to your question.

19. Unless you expect the unexpected you will never find truth, for it is hard to discover and hard to attain.

εαν μη ἐλπῆται ἀνέλπιστον οὐκ ἐξευρήσει, ἀνεξερεύνητον εὐν καὶ ἀπορον (18)

Einstein is recorded as stating that his sole original interest was in the phenomenon of light, which on the basis of faith he felt to be supremely important. This unexpected insight coupled with his lifelong dogged determination, is what brought him finally in the direction of his major conclusions about light.

THE IDEA OF THE CONTINUUM

20. They do not step into the same rivers . It is other and still other waters that are flowing.

ποταμοῖσι τοῖσιν αὐτοῖσιν ἐμβαίνουσιν. ἕτερα καὶ ἕτερα ὕδατα ἐπιρρεῖ. (12)

This is the classic statement of the Continuum for which Heraclitus is so famous then and now, that little comment is necessary. But the words which follow directly (see below) are most strange. On first thought they would seem to be a scribe's addition of something quite different, a scrap which he had to fit in somewhere. Given the river and waters, this might be a good place for this insertion! But could it be that souls themselves derive from the continuum, that since they are in similar process of continual change, that they can be best described in terms of Heraclitus' river-imagery? Best watch this carefully and suspend judgment here....

(and souls take their spirit from the waters)
(*καὶ ψυχαὶ δὲ ἀπο τῶν ὑγρῶν ἀναθυμῶνται.*)

21. You cannot step twice into the same river, for other waters and yet others go ever flowing on. They go forward and back again.

*ποταμῶι γαρ ουτ ἔστιν εμβῆναι δις τῶι αὐτῶι.
σκίδνησι και πάλιν συνάγει.....και πρόσεισι και άπεισι (91)*

These two statements pose clearly the problem of the continuum as inherent in the nature of things. It is not the same river obviously since the water has all moved along downstream. Nor is it the same YOU, since each instant your physical nature has replenished and recreated parts of itself. This may seem contrary to our "common-sense" notions of daily living, but fits well with the idea of modern social relativity, in which the normal state is one of motion. Yet the common view of many people is that all is static, even our lives and bodies.....of course quite wrongly. One might ask the Oracle at Delphi if the Logos is in continual change too, a changing master-plan which suits the changing world which it informs.

22. Cool things become warm, the warm grows cool, the moist dries, the parched becomes moist.

*ψυχρον θέρεται, θερμον ψύχεται, υγρον αναίνεται,
καρφαλέον νοτίζεται (126)*

Here is a possibly trace of the above notion about souls taking their nature from the rivers, spirits somehow alembicated from the liquids. It seems hardly necessary to refer to the Second Law of Thermodynamics with its statement about the even flow of heat, in a milieu of constant energy transfer. We know that the flow of heat is from hot to cool is normally in one direction, however Heraclitus had already added a consideration (above) about a two way equation in the words "They go forward and back again (*..και πρόσεισι και άπεισι*).

23. It is in changing that things find repose.

μεταβάλλον αναπαύεται (84a)

In a world in which motion is the normal state, there may be an apparent but temporary state of what we see as static "repose". In other words there is a seeming "repose" but only as a by-product of the process of continual change. Perhaps this is something of which we get a psychological snapshot, like a single motion picture "frame" in a slurry of moving images. In other words, there may possibly be static Moments in the Continuum.

24. Time is a child moving counters in a game; the royal power is a child's.

αιων παῖς εστι παίζων περρεύων. παιδος ἢ βασιληίη (52)

This is a brilliant figure. The word "child" in Greek is nepios, referring to a child who cannot yet speak, hence a very young child indeed. This mere-infant is randomly moving pieces on a checker board, and Heraclitus intuitively feels that this randomizing activity is the "ruling power" of the world. Is this not the key to biological evolution randomly moving genes in an infinity of time....?

The Greek word basileia does mean Kingdom or Royal Power, but there may be another interpretation, which I offer tentatively. In the ancient chess/checkers game which dates far back to ancient Persia, the termination of the game by stalling the king is called "checkmate", which is understood to be Iranian for "shah + mata" or "king-dead". Note the Skt. mrtas "dead" as cognate with Lat. mort-, mortalis etc. Could this fragment mean that the child who moves pieces continually without knowing what he is doing, will eventually arrive at a checkmate?

Perhaps far-fetched to us, but a theoretical statistician would have no problem with this at all.

25. War is both father and king of all, some he has shown forth as gods and others as men, some he has made slaves and others free.

πόλεμος πάντων μὲν πατήρ ἐστι, πάντων δὲ βασιλεύς καὶ τοὺς μὲν θεοὺς ἔδειξε τοὺς δὲ ἀνθρώπους, τοὺς μὲν δούλους ἐποίησε τοὺς δ' ἐλευθέρους(53)

Especially in the Post Industrial Age when war has become far more than squadrons of men crossing borders to pilfer a neighboring tribe, we have come to think of War with fear, horror and emotional distaste. So it will seem surprising to read Heraclitus' words on Polemos as the king. It would be nice to find him couching another meaning with a philosophical content, but that is hardly possible, since the words are quite clear. But suspend judgment here, and let us read on to the next paragraph which carries the figure of War further along.

26. It should be understood that war is the common condition, that strife is justice, and that all things come to pass through the compulsion of strife.

εἰδέναι χρὴ τὸν πόλεμον εὐνία ξυγόν, καὶ δίκην ἔριν, καὶ γινόμενα πάντα κατ' ἔριν καὶ χρεών(80)

For Heraclitus war is the upsetting factor which moves static situations into unwilling change. We try to write laws which will last forever, find again and again they have a short half-life. War goes further and destroys the balance of law, initiating even further rates of change than economic development and social change. The history of the West might unfortunately be written as the history of western warfare. And a great deal of advance in technology, from gunpowder to atomic energy, has its origins in the requirements for war based devices. Heraclitus is speaking of war as accelerator of change, but that notion

verges instantly into the realm of political warfare for which we have been paying high costs for a long time.

27. Homer was wrong in saying, "Would that strife might perish from amongst gods and men" . For if that were to occur, then all things would cease to exist.

The three statements above take War as a normal state since it is changing in itself and also changing relationships between states and people. Strife, war and even disease are, in Heraclitus' terms, essential components of the human universe. Despite our attempts, usually puerile and futile, to live in a world of equanimous peacefulness, there is an unrest and dissent which constantly emerges. It may be change of attitude, opinion, or it may be the shifts in the stock market, in national boundaries, in the armies which march from here to there bringing in change. This may not be optimal, but it has been part of the historical scene from the start, and does not seem inclined to go away in these early years of the new millennium.

ON NATURE

Something must be said at the start about that word "Nature", which is a poor and misleading translation of the Greek. *Physis* (*physis*) in Greek is a word which traces its ancestry back to the Indo European root **bhū-* which means "be, become" and is cognate with words spread throughout the European tongues, with many examples from Latin "fui" to modern English "be". In Greek the word was used to outline the idea of "coming into being" or being as the end result of a process of generation. Being and Becoming are quite different notions, as are *Sein* and *Werden* in German.

The Greeks saw *Physis* as the process by which things came into being, how they became what they turned out to be, and in their usage the word became a key term for the evolving world which they saw all around them. This is quite different from the Hebrew god making the world by design in a week of work, it sees the world as a long pro-

cess of becoming and it is the becoming-ness which characterizes their idea of the world in which they lived.

The Romans who had studied their Greek philosophers well needed a Latin translation for the un-Roman aspirated -ph- and lipped -u- sound of Ph-y-sis. They started with the Latin verb "nascor", put a noun ending onto the past participle "natus" and came up with *Natura* as natural for *Physis*. To an educated Roman the new term *Natura* meant *physis* exactly.

English has other meanings galore. We speak of a man's "nature" as his character, we say "naturally" when we mean logically, and we rejoice in the pleasures of Nature in the park, garden and woodlands. So when we discuss a group of Heraclitus' thoughts which are neatly labeled under the title ON NATURE, we are starting off on the wrong foot, unless we specifically equate Nature with *Physis* in all its philosophical contexts. We do however want a familiar English word for a title, so **On Nature** will have to suffice. Now we can proceed to the fragments!

28. There is exchange of all things for fire and of fire for all things, as there is of wares for gold and of gold for wares.

πυρός ανταμοιβή τα πάντα και πῦρ πάντων ὅκοσπερ χρυσοῦ χρῆματα και χρημάτων χρυσός(90)

This is nothing less than a brilliant intuitive statement, although without scientific or mathematical proof, of the idea behind Einstein's $E=MC^2$. Fire is the nearest thing the Greek could imagine for our idea of Energy. Although static electric forces were incidental in the Greek world, fire did seem to have some of the dissolving and combining capacities which we refer to as Energy. Fire is of course one form of energy, and perceiving fire as a building force under aegis of the sun's fire, as well as a destroying force in the flames of the hearth, is not only intuitive; it is largely correct.

The figure of the marketplace is striking as an explanatory equation: As Money and Products represent a two-way equation, so Energy and Mass Objects also stand in a two-way relationship. Some may find this interpretation difficult to see, but a) it fits the Greek words closely, and b) unless we go this way, what meaning does this fragment have at all? Strange as it sounds, this is no hocus-pocus of an ancient vein of alchemy, it is a rational statement couched in terms of a Greek proportional equation. On the left side are A <----> B, which are seen as parallel in their operation to C <---> D. In the marketplace of the Universe, Item A can be transformed into Item B and back again ---- just as Products can be turned into Dollars, and Dollars to Products again.

How Heraclitus happened to think this through is startling, but there are many key points in Greek pre-Science which anticipate modern investigations. Lucretius as summarizer of Epicurean science lists a few of them, probably a surprise to the Latin student of Roman poetry: The Law of Conservation of Energy; The Law of Conservation of Matter; A clear statement of animal Evolution; Molecular interlocking. All this should come as no surprise for them awakened, Heraclitus had already said that there is a Logos behind everything which we continually miss seeing.

29. This universe, which is the same for all, has not been made by any god or man, but it always has been is, and will be an ever-living fire, kindling itself by regular measures and going out by regular measures.

*κόσμον τόνδε, τον αυτον απάντων, ούτε τις θεών ουτε
ανθρώπων εποίησεν, αλλ' ἦν αει και έστιν πῦρ αείζων,
απτόμενον μέτρα και αποσβεννύμενον μέτρα(30)*

Here is an interesting caution to modern science which is now pressing hard on the origin of the Universe at a specific place and moment in time, the Original Coming-Into-Being of the world as the Big Bang. Heraclitus' comment is that it has always been there and always will be, but the forms and stages are constantly changing. One suspects that if confronted by Big Bang theory, he would have said that the out-blowing of energy from a single specific point in ancient time must be the turning point of an in-burning of energy toward single point before that moment. Why assume a start, when we find everything continually turning from one state to another without pause or interruption? Is the idea of an Origin a catchword in our common vein of thinking?

30. He calls it: craving and satiety.

καλει δε αυτο --- χρησημυσύνην και κόρος (65)

One might compare a chemical situation which actively absorbs material into solution, until it reaches the point of saturation at which time it can absorb no more. The solution is thirsty, then at a certain level it becomes saturated, or satiated.

31. It throws apart and then brings together again; it advances and retires.

ποταμῶι γαρ ουτ ἔστιν εμβῆναι δις τῶι αυτῶι

σκήδνησι και πάλιν συνάγει, και πρόσεισι και άπεισ(91)

We seems to have two separate fragments sutured together here, the first is the usual statement of the continuum in the river, while the second line has a very different meaning, which goes well with the previous Frag. 30. as an example of elements coming together in a combinatory process, and then dissociating. This could be called with our familiar word Synthesis, but balanced with an opposing Diathesis.

32. The transformations of fire -- first, sea; and of sea, half becomes earth and half the lightning-flash.

πυρος τροπαι πρῶτον θάλασσα, θαλάσσης δε το μεν ἥμισυ γῆ, το δε ἥμισυ πρηστήρ

33. When earth has melted into sea, the resultant amount is the same as there had been before sea became earth.

γῆ θάλασσα διαχέεται, και μετρέεται εις τον αυτον λόγον, ὅκοιος πρόσθεν ἦν η γενέσθαι γῆ(31)

These last two citations seems to indicate a clear statement of the conservation of mass despite change of state. We know that there are no difference in actual mass, but the general effect of Heraclitus' direction is correct. But the split of sea into half earth and half energy (as lightening) is unclear, a statement which does not fit our way of understanding conversions of state.

34. Fire lives in the death of earth, air in the death of fire, water in the death of air, and earth in the death of water.

ζῆι πῦρ τον γῆς θάνατον και αἠρ ζῆι τον πυρος θάνατον, ὕδωρ ζῆι τον αέρος θάνατον, γῆ τον ὕδατος

and water is the death of earth, and air is the death of water, and fire of aer. and so in reverse

ὅτι γῆς θάνατος ὕδωρ γενέσθαι και ὕδατος αέρα θάνατος γενέσθαι και αέρος πῦρ και ἔμπαλιν(76)

This is a classic statement of the Greek four-element universe, the conversion of state being called a death since one part disappears as the other comes into being. Here the process is cited as reversible, probably a Heraclitan addition.

35.

The thunderbolt pilots all things through all things.

τα δε πάντα οιακίζει κεραυνός(64)

I think of the experiments which were done some years ago to try to determine the nature of the original atmosphere of the earth, by subjecting a sealed mix of carbon dioxide, nitrogen, oxygen and hydrogen to a very high voltage electric bombardment for a period of time. Some felt that this was the process by which the amino acids were being produced as a first step toward the phenomenon of Life. Heraclitus has a sense of lightening, which we know as a half million volt electric flash, as being a dominant creative force in our world, somehow. Neither the modern experiment, not Heraclitus' intuition, can be proved, but both are extremely interesting!

36 The sun is , as H. states, not only new each day, but forever continually new.

ὁ ἥλιος οὐ μόνον (καθάπερ ὁ Η. φησι) νέος ἐφ' ἡμέρη ἐστίν, ἀλλ' αἰεὶ νέος συνεχῶς (6)

This is Aristotle's comment from Meteor. 355a, an excellent remark on two counts. First the sun which we see each morning is in some part not the same sun as yesterday, considering the enormous amount of conflagration on the sun's surface, the volumes of hydrogen being continually converted, and the energy dispersed outward as light. Also since we are in a continual state of change and flux, so must the sun be changing, and the notion that it is exactly the same Sun tomorrow morning shining on the same Earth as today is really an illusion.

37. The sun is the breadth of a man's foot.

περι μεγεθους ηλιου.--- εύρος ποδος ανθρωπείου (3)

This is a primitive attempt to state a trigonometric view of a far object seen in reference to a near object. From the single point of the eye's fovea, looking past the two sides of a foot at about four feet distance, a triangle can be imagined reaching out to the sun. If the sides of the foot line up approximately with the edges of the sun's image, we would have the angular components of a trigonometric problem. But without more data as to distance, we won't be able to estimate the sun's distance from the earth. But this is the beginning of a process which would take many years to work out the germ of the trigonometric process.

38. If there were no sun, the other stars would not suffice to prevent its being night.

ει μη ἥλιος ἦν, ἔνεκα τῶν ἄλλων ἀστρων ευφρόνη αν ἦν
(99)

Heraclitus sees the difference between the light levels of sun and stars, and indirectly infers that the phenomenon we call Day or Hemera is generated by the sun's enormous heat-light. Moon reflects a weak light from the sun, something not known to Heraclitus, but he realizes that when the moon does not show, it is sheer night. He uses the Greek term euphrone for night as "the kindly one", probably a euphemism for humans' general fear of the dark.

39. The boundary line of evening and morning is the Bear; and opposite the Bear is the boundary of bright Zeus.

ηοῦς και ἐσπέρας τέρματα ἡ ἀρκτος και αντίον τῆς ἀρκτου οὔρος αιθρίου Διός. (120)

40. The fairest universe is but a heap of rubbish piled up at random.

.ὥσπερ σάρμα εικῆ κεχυμένον ὁ κάλλιστος (ὁ) κόσμος (124)

This is a problem involving infinite randomization finally yielding an entropic state, which we have learned to accept as our designed world. We are looking at the pleasantly solid and static world around us from the wrong end of the process, it is all a snapshot of randomized garbage taken at our specific moment in time.

41. Every beast is driven to pasture by a blow

πάν ἔρπετον πληγῇ νέμεται (11)

A great statement of a great truth. I am thinking not only of my students who constantly resist new and hard ideas by their very nature, but of my own learning curves. Every thing I have ever learned which has turned out worth learning, has been learned with infinite difficulty and often much pain and often approached unwillingly.

What is the blow which drive the beast to pasture and why must he be driven? It is because every live state tries to preserve its homeostatic identity as an in-built system of self-preservation, and the only way to effect change is by application of an external force. We can speak of a natural laziness of spirit, or an unwillingness to try new ways., remembering that you can drive a horse to water you can not make him drink.

ON THE SPIRITUAL

42. You could not discover the limits of soul, even if you traveled by every path in order to do so; such is the depth of its meaning.

ψυχῆς πείρατα ἰων οὐκ ἂν ἐξεύροιο, πᾶσαν ἐπιπορευόμενος ὁδόν. οὕτω βαθυὺν λόγον (45)

43. Soul is the vaporization out of which everything else is composed; more-over it is the least corporeal of things and is in ceaseless flux, for the moving world can only be known by what is in motion. (.)

44. Souls are vaporized from what is moist.
καὶ ψυχαὶ δὲ ἀπο τῶν ὑγρῶν ἀναθυμιῶνται (12)

This connects with the ancient views of Soul as a gaseous substance of sorts, as in Sanskrit atman "soul" from verb at- "breathe", Lat. anima as compared with Gr. cognate anemos "wind", Lat. spiritus from spirare "to breathe". Although the word "gas" was only coined by 17 c. physicists from Greek chaos, the idea of such a state was always present, and the ancients connected it with something which we still cannot define exactly. Heraclitus sees the vapor arising from a moist object in the morning sunlight as analogous to Soul, and we had perhaps best leave it at that, a tentative perception. A modern speculation might try to go one step further and see Soul as a kind of super-gas, a spiritual plasma.

45. Soul has its own inner law of growth.

ψυχῆς ἐστι λόγος ἑαυτον αύξων(115)

Since as above Soul is without limit, infinite expansion is a natural possibility, as seen from the inside of the soul's identity.

46. A dry soul is wisest and best. The best and wisest soul is a dry beam of light.

*αύη ψυχη σοφωτάτη και αρίστη
αυγη ξηρη ψυχη σοφωτάτη και αρίστη (118)*

These two versions of the same idea have an essential difference. The first sees soul as a dry emanation from water, as noted above. But the second goes one step further and sees soul as even dryer, in fact a beam of light. This takes soul into the realm of pure energy as a modern physicist would see it, which will be as Light. This is quite different from many views of Soul as a spirit or a mental configuration, whereas Heraclitus stays with a physical description pushed to the ultimate level of rarification.

47. Souls take pleasure in becoming moist.

ψυχῆισι τέρψιν η θάνατον ύγρῆισι γενέσθαι.

But there is a second part to this quotation:

...we live in the death of them (souls) and they in the our death

*ζῆν ἡμᾶς τον εκείνων θάνατον και ζῆν εκείνας τον ἡμέτερον
θάνατον (77)*

It would seem that just as souls lose their identity by reverting to moisture, in similar fashion we lost our identity by reverting to become souls, and inversely souls can lose their identity as soul, by becoming human beings. This is a very complicated equation which cannot be solved by a modern way of thinking, but apparently it is within the range of dark Heraclitean thought.

48. A drunken man has to be led by a boy, whom he follows stumbling and not knowing whither he goes, for his soul is moist.

*ανήρ ὄκοταν μεθυσθῆι, ἀγεται ὑπο παιδος ανῆβου
σφαλλόμενος, ουκ επαίων ὄκη βαίνει, ὑγρην την ψυχην
έχων (117)*

Now we have the drunkard contaminating the "gaseous" part of his being with liquid and alcohol, and led home by a boy who may be uneducated and simple, but is at least dry. In a very different perspective, Lao Tzu saw the drunkard as spiritually neutral and relaxed, so he was unhurt when he fell off the wagon carrying him home.

49. It is death to souls to become water, and it is death to water to become earth. Conversely, water comes into existence out of earth, and souls out of water.

*ψυχηισιν θάνατος ὕδωρ γενέσθαι, ὕδατι δε θάνατος γῆν
γενέσθαι, εκ γῆς δε ὕδωρ γίνεται εξ ὕδατος δε ψυχή(36)*

50. Even the sacred barley drink separates when it is not stirred.

ὁ κυκεων δίσταται (μη) κινούμενος (125)

This is probably an example of the previous statement, showing how a solid of lighter weight will separate and rise to the top of a liquid when it is left to settle. The usual example in Greek is the separation of olive oil and water, used as a figure for personal incompatibility. Interestingly, this is still the way ground diamond dust is

separated out for size, by letting it settle out in timed intervals in a container of olive oil.

51. It is hard to fight against impulsive desire. Whatever it wants it will buy at the cost of the soul.

θυμῶι μάχεσθαι χαλεπον. . ὁ γαρ αν θέληι, ψυχῆς ωνείται
(85)

Here is probably the earliest statement of the power of advertising in a market economy. The phrase "purchasing at the cost of soul (genitive of price!)" is a curious phrase, something parallel to making large credit card purchases at the cost of solvency and financial integrity!

52. It would not be better if things happened to men just as they wish.

*θυμῶι μάχεσθαι χαλεπον. ὁ γαρ αν θέληι, ψυχῆς
ωνείται*(110)

Taking this as connected with the above, we are warned to be cautious about wishes, since our greatest danger is not having what we need but getting what we wish for. The Grimm story of the three wishes ending up with a sausage on the nose is a good folk example. It often happens that things we carefully plan out with infinite care, like the Garden City concept of ideal housing, World Peace and the League of Nations, have a tendency to somehow to go wrong.

53. It is better to hide our ignorance.

*αμαθίην γαρ άμεινον κρύπτει.---- κρύπτειν αμαθίην
κρέσσον* (95)

Plutarch who gives us this line adds that it is harder to do so over wine! The modern proverb runs: "Better to keep quiet and be thought a fool, that open your mouth and remove all doubt."

54. A foolish man is a-flutter at every word. (87)

βλαξ άνθρωπος επι παντι λόγῳ επιτοήσθαι φιλεῖ

One must stop and think about things and not go into wild enthusiasm or confused thought! Pythagoras had said: Be not taken by uncontrollable laughter, this may be a social notion rather than a word of counsel. Some oriental cultures suspect that undue laughing indicates too much loss of anima. For example, American have a tendency to smile automatically, which we find a friendly a disarming gesture, while the French find this foolish and objectionable.

55. Fools, although they hear, are like the deaf. To them the adage applies that "when present they are absent".

αξύνετοι ακούσαντες κωφοῖσιν εοίκασι. φάτις αυτοῖσι μαρτυρεῖ παρόντας ἀπείναι(34)

In a day when we try to describe any physical or mental deficiency as being "challenged", this sounds rude and unthinking. But it is unrealistic to avoid using the ancient and traditional words "deaf" or "retarded", and Heraclitus has none of our modern over-sensitivity. For Heraclitus it is simpler: You talk to a deaf man and he doesn't answer; you talk to a fool and he says "uh!". Same reaction for both, of course for entirely different reasons. But for all of us, when discussing the nature of the Logos, we tend not to be really present at all. Q.E.D.

56. He said: Bigotry is the sacred disease, and self-conceit tells lies.

τὴν δε οἴησιν ἱεραν νόσον ἔλεγε και τὴν ὄρασιν ψεύδεσθαι(46)

The word "oiesis" does not translate into English well. It comes from a Greek verb originally meaning "thinking", but is often used for "self-thinking", which we would call "self-conceit", and this is in a way the core of bigotry. Whichever words we use, we must keep the core meaning clear in our minds.

The Hippocratic Father of Medicine had made a point about Sacred Diseases when discussing epilepsy, which had previously been dubbed god-given and sacred, by stating that there are no diseases which are of divine origin, that disease is organic and treatable as such. This was a major step forward for the ars medicina. Heraclitus here cleverly comments on this special kind of mental "disability" by using a Hippocratic term, thereby inferring that Bigotry is a disease capable of cure like any other malady. But no cure seems to have been devised for it in modern times. How do we cure bigotry, how do we exorcise it...?

57. Most people do not take heed of the things they find, nor do they grasp them even when they have learned about them, although they think they do.

ου φρονέουσι τοιαῦτα πολλοί, ὀκόσοι ἐγκυρεῦσιν, ουδε μαθόντες γινώσκουσιν. ἐωντοισι δε δοκέουσι (17)

Heraclitus had said this before, but here adds a critical detail: They don't understand, but they actually think they do, the ultimate error and blindness.

58. If all existing things were smoke, it is by smell that we would distinguish them.

Εἰ πάντα γένοιτο τὰ ὄπτα καπνος γένοιτο, ρῖνες διαγνώιεν (7)

59. In Hades souls perceive by smelling.
αἱ ψυχαὶ οσμῶνται καθ' ἄιδην(98)

We humans depend on sight for about 85 percent of our inputs, while dogs use smell for most of their perception, they think in terms of smell with a frontal lobe highly developed for that function. Now Heraclitus rightly sense that in a world of smoke and smell, we would use scent rather than sight. Just so in the dark we can use infra-red with special sensors to "see", in medicine we use Roentgen rays to "see" within, and by refracting electron images we can "see" things invisibly small. In short, perception is highly relative!

Hades is of course dark, but there is even a ancient folk-etymology for the name, as a- "not" and the verbal stem id- "see".

60. Corpses are more fit to be thrown out than dung.

νέκυες γὰρ κοπρίων ἐκβλητότεροι (96)

He sees the emptiness of Greek funeral ritual, a cadaver lacks the one basic human quality of Life, hence is just a dead thing and nothing more. Much religion concerns itself with relationships between the living and the dead, an intuitive but not entirely rational concern, since all know the difference between the two states. When one of the philosopher Kant's friends died, Kant never mentioned him again, because in fact he had ceased to exist. Ceasing to be alive is a fact which no ritual will cure.

ON THE DIVINE

61. Human nature has no real understanding, only the divine nature has it.

ἦθος γὰρ ἀνθρώπειον μὲν οὐκ ἔχει γνῶμας, θεῖον δὲ ἔχει
(78)

It seems clear that Heraclitus meant by "theion" or divine something different by from the deities of Greek mythology and the state formal religion of the poleis . From the following passages, it appear he has a notion of the divine as existence of a world-mind, a "nous" which encompasses everything in the universe.

62. Man is not rational, there is intelligence only in what encompasses him.

(The Greek is not in Diels Kranz...)

He must mean that Man is not automatically endowed with "reason" or logic, which is slowly built up in a society by small increments. The history of science and mathematics points to this kind of evolutionary process of the mind. There is pattern and reason in everything around us in the world, and what intelligence we have is drawn from our perception of the encompassing world.

63. What is divine escapes men's notice because of their incredulity.

ἀπιστίηι διαφυγγάνει μὴ γιγνώσκεσθαι (86)

As in #61, the divine is not readily apparent, learning is a matter of mental perception of a higher power, but not religion in the usual sense.

64. Although intimately connected with the Logos which orders the whole world, men keep setting themselves against it, and the things which they encounter every day seem quite foreign to them.

*ὦι μάλιστα διηνεκῶς ὁμιλοῦσι λόγῳ τῶι τα ὅλα
διοικοῦντι, τούτῳ διαφέρονται, καὶ οἷς καθ' ἡμέραν
εγκυροῦσι, ταῦτα αὐτοῖς ξένα φαίνεται (72)*

Since Greek Logos means something like Pattern rather than Reason, then our incapacities at grasping larger and larger patternings is one of the limiting factors of Mind. We tend to ignore in our daily lives the shape of the Big Bang origins, as well as the furious whirl of electrons in a seemingly solid body. Man lives in smaller patterns. In the Greek of the Septuagint, at Genesis we find Logos again, often mistranslated as The Word (of God presumably). Surely it means sheer Pattern, patterns without material, which is remedied by creating objects with mass to flesh out the patternful world in the week of creation.

65. As in the nighttime a man kindles for himself (haptetai) a light, so when a living man lies down in death with his vision extinguished, he attaches himself (haptetai) to the state of death; even as one who has been awake lies down with his vision extinguished and attaches himself to the state of Sleep.

*ἄνθρωπος ἐν ευφρόνῃ φάος ἀπτεται εαυτῶι, (αποθανών)
αποσβεσθεὶς ὄψεις, ζῶν δε ἀπτεται τεθνεῶτος εὔδων
(αποσβεσθεὶς ὄψεις), εγρηγορως ἀπτεται εὔδοντος (26)*

66. Immortals become mortals, mortals become immortals; they live in each other's death and die in each other's life.

*αθάνατοι θνητοί, θνητοὶ ἀθάνατοι, ζῶντες τὸν ἐκείνων
θάνατον, τὸν δε ἐκείνων βίον τεθνεῶτες(62)*

It seems Heraclitus believes in two separate worlds, which can inferace to each other by the process of death. This is different from the Indian idea of reincarnation, where death here moves the perfect person to another world forever, or returns an imperfect one to our world for recycling. This statment of Heraclitus seems a two way process, for us it is unfamiliar as an idea and not easy to comprehend.

67. There await men after death such things as they neither expect nor have any conception of.

*ανθρώπους μένει αποθανόντας ἄσσα οὐκ ἔλπονται οὐδε
δοκέουσιν (27)*

This seems a partial answer to the previous entry. We have guessed for ages about what lies beyond, relating partial stories from near-death experiences, from trances and visions. But by flatly stating that the other side is not only less knowable than we imagine, but less knowable than we CAN imagine, we let the whole matter rest in peace.

68. They arise into being-ness and become guardians of the living and the dead.

*ἐνθα δ' εὐόντι επανίστασθαι και φύλακας γίνεσθαι εγερτι
ζώντων και νεκρῶν (63)*

69. A man's character is his guardian divinity.

ἦθος ἀνθρώπῳι δαίμων (119)

The daimon is a familiar concept to the Greek but not at all clear to us. On the one hand Socrates' daimon which speaks to him privately advising against something as a caution, is too similar to Jung's voice of the unconscious mind or Super Ego, to be set aside without serious consideration. Romans spoke of the "genius" as a private personal deity, virtually

an alter ego to a man, so closely matched to the man's personality as to be likely to steal altar offerings from the crooked man's altar (Petronius). And in later usage the word becomes the Demon of medieval theology, ending up as a TV character named Damon, the child of the devil.

For Heraclitus none of this later development exists, he is thinking of a personal psychic shadow which reflect the identity and character of the real man whom it matches.

70. Greater dooms win greater destinies.

μῶροι μέζονες μέζονας μοῖρας λάγχανουσι (25)

The words meros and moira both are both derived from the verb mer-omai/ mer-esthai "divide out, allot, assign". It seems Heraclitus is playing on a supposed inner relationship between the two words, but there should be a further meaning in mind.

Moros is used for disaster, for death. Moira is Fate, often used in positive terms as the eventual working out of foretold destiny, also in terms of what a person or nation has actually done in life. So the gist of this line would seem to suggest that grand calamities have a way of being involved with grand evolutions of the patterns of Moira, as fateful and to a certain degree fated. This is a difficult line with the inbuilt pun and an unsure meaning, but it has a wonderful ring to it, like St. Thomas' Dies Irae.....dies illa.

71. The most reliable man understand reliable things and guards them. And Justice will overtake fabricators of lies and false witnesses.

δοκέοντα γὰρ ὁ δοκιμώτατος γινώσκει , φυλάσσει, καὶ μέντοι καὶ Δίκη καταλήψεται ψευδῶν τέκτονας καὶ μάρτυρας (28)

The man of right opinions grasps reliable information. And there is a supervening World Justice which is watching everything that goes on down here. It will eventually overtake fabricators of false information, just as he says in another context: The sun if it goes out of course, it has to pay for the error.

72. Fire in its progress will catch all things by surprise and judge them.

πάντα γάρ το πῦρ ἐπελθὼν κρινεῖ καὶ καταλήψεται (66)

If fire is the ultimate Energy Force which is responsible for the entire universe, then any lower level minor infraction of truthfulness will have to pay its penalty to the force at the top, at the highest level. Those of us who are concerned with the deterioration of the ionosphere through irresponsible use of active gasses which consume ozone, would say that we are to be judged on the highest level by the e highest energy source (pur) which reaches us here as UV radiation ----- quite in the spirit of Heraclitus' warning.

73. How can anyone hide from that which never sets?

το μὴ δῦνον ποτε πῶς ἄν τις λαθοί; (16)

Clearly Heraclitus is aware of the earth's rotation as a ball, in the face of a sun which is simply always there. For millennia the world did really slide back in astronomical knowledge. But more important is the consideration of being only intermittently aware of something which is absolutely permanent and eternal.

74. (When visitors unexpectedly found Heraclitus warming himself by the cooking fire, he said " Here, too, are gods. "

Again, Fire is special, as near to the concept of energy as could be found in the Greek world. For our use an electric current is a clearer manifestation of energy, but still only manifestation.

75. They cleanse themselves with others' blood, as if someone were to wash himself by walking in shit were to cleanse himself with shit. It would seem madness to observe such a man who is acting this way. And they pray to images, much as if they were talking to temple edifices, for they do not know what gods and heroes are.

*καθαίρονται δ' ἄλλωι αἵματι μαινόμενοι ὅιον εἴ τις
πηλον εμβας πηλῶι ἀπονίζοιτο. μαίνεσθαι δ' ἀν δοκοίη, εἴ
τις αὐτον ἀνθρώπων ἐπιφράσαιτο οὕτω ποιέοντα. καὶ τοῖς
αγάλμασι δε τουτέοισιν. εὐχόνται οκοῖον εἰ τις δόμοισι
λεσχηνεύοιτο οὐ τι γινώσκων θεοῦς οὐδ' ἥρωας οἰτινές
εἰσι(5)*

Heraclitus is violently repulsed by the thoughtless and useless rituals which are commonly performed in the name of religion, sometimes employed here with animal sacrifice as a soul cleansing process. He actually points to three offenses, a) blood sacrifice, b) worship of statues and religious figures, and c) worship of the temple itself (oikos) as the house of God.

Some modern anthropologists feel that rituals like animal sacrifice, even headhunting in Borneo and the veneration of fetish objects worldwide, have deep meaning in the structure of their societies and should not be viewed as mere superstition. Heraclitus would deny their views saying that these practices remove men from the real spiritual powers which they fail to recognize. Note that Judaism and Islam following the OT, forbid statues and images in religious service, but objects like the wailing wall and the holy stone at Mecca have crept back into use as symbols. Catholics crossing themselves entering a church fall if ever so unconsciously under class c) above. The majority of ordinary men and women do have a need for a real object on which to focus their devotions, for Heraclitus an error.

76.with night-walkers, magicians, bacchantes, revelers, and participants in the mysteries . What are regarded as mysteries among men are unholy rituals.

.....νυκτιπόλοις μάγοις βάκχοις λήναις μύσταις.. τα γαρ νομιζόμενα κατ' ανθρώπους μυστήρια ανιεροστι μνεῦνται (14)

Heraclitus stakes a bold stand against the ubiquitous Mystery religion of ancient Greece! We must remember that the Mystery religions appeared early in Greece in the Homeric Hymns, and occupied a major position in Greek religious life. A fragment of Sophocles speaks of those who enter the mysteries before they die as thrice happy beings. The formal state religions and the world of ancient mythology were of little importance to the masses who were deeply involved with the Mysteries, their rites and rituals and even their apparent mushroom based drug sub-cultures. Much of the Mystery consciousness filtered into early Christianity, while later Christian apologists censored all mention of Mystery information so well that we have only sketchy information of their hold on society.

77. Their processions and their phallic hymns would be disgraceful exhibitions were it not that they are done in honor of Dionysos. But Dionysos in whose honor they rave and hold revels, is the same as Hades.

ει μη Διονύσωι πομπην εποιούντο και ὕμνεον ἄισμα αιδοίοισιν, αναιδέστατα εἶργαστ' αν. . ὡτος δε Αἰδης και Διόνυσος, ὅτεω μαίνονται και ληναίζουσιν (15)

A close reading of the Bacchae of Euripides will show what Heraclitus is criticizing in the Dionysiac cult world, while the reference to Hades must point to underground rituals which we are less aware of now. Hades as "Hell" in the Christian sense, is of course not involved here.

78. The Sibyl with raving mouth utters solemn, unadorned, unlovely words

*.....σιβυλλα..μαινομένωι στόματι αγέλαστα και ακαλλ-
ώπιστα και αμύριστα φθεγγομένη.....(92)*

The citation comes from Plutarch in an essay on Pythian oracles. He had been speaking of the beauty of Sappho poetry and here compares it with the raving of the manic oracles of the Sibyl, adding "but she reaches out over a thousand years with her voice because of the god within her". The Delphic oracle is now discovered by competent geo-archaeologists to stand over a fissure in the rock formation which allows gasses to escape into the oracular chamber. Toxicified by rising gas, the Sibyl loses control over her conscious mind, perhaps exploring an unconscious level of perception with a social messaging output.

COUNSELS

80. Thinking is common to all.

ξυνόν εστι πάσι το φρονέειν (113)

These five words despite their verbal simplicity, have a profound meaning which I can only adumbrate here. If there IS a world Logos, and the world runs in time with it, then there must be an overall pattern of mind or Nous of the universe, which everything participates in. Therefore everything in some measure or other must be running in time with this world sense.

Heraclitus connects intellectually with various threads from other parts of the world and other ages. To Buddhist thinkers the above fragment is the familiar zen topic, that the Buddha Nature is everywhere, in every stick and stone, even in the toilet paper in the outhouse. This Buddha-Mind is common to all.

It was years ago that Sri Aurobindo wrote a book on Heraclitus who he felt was cognate to much Indian thinking, probably historically under the influence of Indian sources as well as being spiritually parallel. *

Heraclitus' thinking has a remarkably broad base. Aristotle spoke of him often and it was he who coined the phrase "ho skoteinos" or The Dark One". But it was the Alexandrian academicians who perpetrated the notion of Heraclitus as an inexplicable mystic, a dealer in uninterpretable riddles. Christian apologists derided his words which were beyond their range of understanding, but in the post-Renaissance world Heraclitus has exerted a great influence on many fields.

Buckminster Fuller said years ago in the days of his popular image, that everything connects, that Thought of the universe is everywhere, and that it is the world-thought that we all participate in --- an exoteric thought from a man who was primarily an engineer. He planned a gigantic model of planet Earth with computer controlled lights to respond to any local pattern input, but always to be seen on the surface of the planetary display. This is a probably minor version of what Heraclitus was thinking about, earth rather than universe bound.

* ISBN 817058163X, pub. Sri Aur. Pub. Co, India

81. Men should speak with rational mind and thereby hold strongly to that which is shared in common ---- as a city holds on to its law, and even more strongly. For even more strongly all human laws are nourished by the one divine law, which prevails as far as it wishes, suffices for all things, and yet somehow stands above them.

*ξυν νόωι λέγοντας ισχυρίζεσθαι χρη τῶι ξυνῶι πάντων,
ὅκωσπερ νόμωι πόλις. και πολυ ισχυροτέρως τρέφονται
γαρ πάντες οι ανθρώπειοι νόμοι ὑπο ἑνος τοῦ θείου.
κρατεῖ γαρ τοσοῦτον ὅκοσον εθέλει και εξαρκεῖ πᾶσι και
περιγίνεται (114)*

Pindar echoes this thought in Pythian 8, where Dike or justice stands as a deity above the law of men, but this was going to be a hard point to hold in the face of the oncoming Peloponnesian War. Perhaps the only example of respect for the high authority of divine law was the sanctity of the Treasuries in the international sanctuary at Delphi. But this may have been more a matter of the convenience of secure international banking rather than respect.

82. The people should fight for their law as for their city wall.

*μάχεσθαι χρη τον δημον ὑπερ τοῦ νόμου , ὅκωσπερ τείξεος
(44)*

Athens may have thought it was safe behind the Long Wall, but fortifications ceased to have serious value after the sixth century. In the earlier period Tyrtaeus could point to the wall as the last defense between survival and wandering hungry and homeless of the fields. But despite changes, the verbal notion of fighting for your walls persisted, much as we say fighting for your country, now curiously re-named the "homeland".

83. Law involves obeying the counsel of one.
νόμος και βουλήι πείθεσθαι ἑνος

Certainly this is not advice to follow the orders of the leader, something the Greek were never inclined to do. It is certainly the Heraclitean "One" which he is speaking of, the One which comprises everything else. which must be followed as if the leader of the universe..

84. One man is worth ten thousand if he is first-rate.
εἷς μοι μύριοι εαν ἄριστος ἦι(49)

Of course "first-rate" is a very rough translation of *aristos*, which in Homer had meant something like the samurai search after absolute excellence in the battle. But later *aristos* came to be identified with the old and conservative upper class at Athens, and it is in this sense that Theognis uses the word for his own nasty purposes. Since this is one of the few places (see following) where Heraclitus uses the word, we have little to compare it with for usage, so best let the word "first-rate" stand for the nonce.

Again that shadowy prophet of the 1970's, Buckminster Fuller maintained that if one in a hundred thousand is doing creative thinking in a society, that is enough since his thought will permeate society and will eventually benefit all, even to the point of carrying the society economically.

85. The best of men choose one thing in preference to all else, immortal glory in preference to mortal good, whereas the masses simply glut themselves like cattle.

αιρεῦνται εν αντι απάντων οἱ ἄριστοι, κλέος ἀέναον θνητῶν . οἱ δε πολλοι κεκόρηνται ὄκωσπερ κτήνεα (29)

This does sound like a remark tainted somewhat by class consciousness. But it may not be the social classification of Athenian post-Solonic democracy which he is thinking of, but the vulgar crowd who can't hear the doctrines of the Logos and the One.

Even in a democracy as well conceived originally as that of the United States, the level of average understanding on topics above bread-and-butter survival is not very high. How many Americans understand the Constitution and its relevance to personal civic rights, or to our responsibilities in international warfare? Is the meaning of the Monroe Doctrine still understood?

86. Gods and men honor those slain in battle.

αρηιφάτους θεοι τιμῶσι και άνθρωποι(24)

Clement of Alexandria cites this presumably for a Christian purpose, to compare with the notion of peace and forgiveness. How it was originally said is not at all clear in Heraclitan terms. But it does have the approval of Pericles'

Funeral Speech and the Gettysburgh Address.

87. Even a man who is most in 'repute' (reputable?) knows and maintains only what is 'reputed', and holds onto that information. But certainly the justice of Dike will apprehend fabricators and false-witnesses of Lies.

*δοκέοντα γαρ ὁ δοκιμώτατος γινώσκει , φυλάσσει. και μέν-
τοι και Δίκη καταλήψεται ψευδῶν τέκτονας και μάρτυρας
(28)*

This is a classic statement on the unreliability of information.

But there are problems with the Greek words, which don't match with the above translation, so we should give them a closer look. Start with the Greek "dokein" meaning "to seem", so the first word in this quotation "dokeonta" will mean "things as they seem". But remember Plato's caution about Seeming and Being, in his words there is a critical difference between "to einai" or being, and "to dokein einai" or seeming-to-be. So here "the things as they seem" (dokeonta) will be something like reputed information, unconfirmed popular opinion, often nothing more than hearsay.

But the man of Repute (dokimotatos) whose name comes from the same root "dok-", should be something quite different. He is one whom popular reputation confirms as a reliable source of information. So the above quotation addresses a serious problem: The man who is thought to have the best of Opinions, is one who recognizes various opinions and stores them up as information, may be working with nothing more than the current catchwords of the times.

But there is another level to this situation. There exists a superior level of Dike or TRUTH, which eventually catches up with the fabricators of lies and the false-witnesses. Society proceeds by a process like hearsay for most of us, for the scientist or the serious philosopher, each item of hearsay must be tested and proved by the best tools we have at the time. It is no surprise to find that this has happened at various times in the history, it has happened and will happen again. But we can learn to be cautious, to examine situations for the flaws while they are in process, and thus hope to avoid costly mistakes which lead us into situations of irretrievable dishonor.

88. To extinguish hybris is more needed than to extinguish a fire.

ὑβριν χρη σβεννύναι μάλλον η πυρκαϊήν(43)

The Greek word "hubris" is used so often in classical criticism that it has become a standard word in English vocabulary. In Homer it is used for sheer violence and outrage, but later it is used more formally to mark a man's failing to understand that he is a man, and not confuse his role with that of a god. A little catechism seems to run like this: Hubris leads to blindness or Ate, which makes a person blind to his proper role, then he incurs envy of the gods (phthonos), at which point he is open to Nemesis which is both a) ruin and getting his dues b) getting what is allotted by fate to him. This formula figures regularly in Greek drama and Heraclitus although earlier thinkers must have had some of this in mind.

We often translate Hubris as "Overweening Pride" which is fairly close to the meaning of the Greek word, but there is an interpretative problem. The word Pride has so many associations in a traditionally Christian Western world, that we had best keep it apart from hubris. Pride is a Christian sin, hubris is a Greek fatal error. If we do not solve the verbal the problem here, at least we can point it out some of the inconcinnities. I must note that if Gr. hybris or hubris is anything like "overweening pride", then we seem not to have devised a fire extinguisher suitable for this purpose yet.

89. It is weariness to keep toiling at the same things so that one becomes ruled by them.

*καματός εστι τοῖς αυτοῖς μοχθεῖν και ἀρχεσθαι
πόλεμον (84b)*

We are beginning to understand this in the business and manufacturing Western world, as people break down at repeated tasks. The industrial Revolution was based wrongly on repetition and specialization, we are going to have to learn lessons about variegation of work tasks soon, or pay heavily in medical and psychological costs.

OF course this applies equally to things of the mind, to repetition of errors in judgment, to legal and theological dogmata which outline their original purposes.

90. Dogs bark at a person whom they do not know.

κύνες γαρ καταβαῦζουσιν ὧν αν μη γινώσκωσι (97)

This is a wonderful figure of the barking dog, who is also the man or woman railing convulsively at what is not known, mainly because it is not known. The line is applicable to all sort of human situations, whether politics, academics, religion or the idea of Progress. We have seen this in exacerbated form since the start of the Industrial Revolution, but the question is whether this going to go on forever?

91. What sort of mind or intelligence have they? They believe popular folk-tales and follow the crowd as their teachers, ignoring the adage that the many are bad, the good are few.

τίς αὐτῶν νόος ἢ φρήν; δῆμων αἰδοῖσι πείθονται καὶ διδασκάλῳ χρείωνται ομίλῳ οὐκ εἰδότες ὅτι "οἱ πολλοὶ κακοί, ὀλιγοὶ δὲ ἀγαθοί" (104)

Again Heraclitus suspect that the level of popular intelligence is low, that the masses will follow conventional sources of information without a critical eye. But a question remains as to how much he believes in the agathic Upper Classes as preservers of truth in a post-Solonic new Athenian society. The right wing poet Theognis is the example of abuse of this notion.

92e Men (he says) are deceived in their knowledge of things that are manifest, even as Homer was who was the wisest of all the Greeks.

ἐξηπάτηνται (φησὶν) οἱ ἀνδρῶποι πρὸς τὴν γνῶσιν τῶν φανερῶν, παραπλησιῶς Ὀμηρῳ ὅς ἐγένετο τῶν Ἑλλήνων σοφώτερος πάντων. (56)

93. Homer deserves to be thrown out of the contests and flogged and Archilochus too.

τόν δὲ Ὀμηρον ἔφρασκε ἀξιὸν ἐκ τῶν ἀγῶνων ἐκβάλλεσθαι καὶ ῥαπίζεσθαι καὶ Ἀρχίλοχος ὁμοίως (42)

This attack on Homer, who we consider the prime Greek author and in many ways the cultural mainstay of later Hellenic thought, is surprising and we are left largely in the dark as to Heraclitus' reasons. It must be that Homer and the first poet Archilochus simply antedate the new philosophical spirit of the 5th century, since there is no way to harmonize their writing with the new cosmic interests and Heraclitus' preoccupations with the Logos and the One. the world of the Persian Wars.

It may be that Homer was so much a part of everyone's thinking, that social conservatives could try to refute the oncoming new idea by saying: "That's not in Homer.... so it must be some newfangled notion.....". We have a parallel situation when fundamentalists deny the truth of anything that is not specifically mentioned in the Bible. And Homer was in many ways the cultural bible of ancient Greece.

94. Hesiod distinguishes good days and evil days, not knowing that every day is like every other.

.ΗΣΙΟΔΩΙ ΤΑΣ ΜΕΝ ΑΓΑΘΑΣ ΠΟΙΟΥΜΕΝΩΙ, ΤΑΣ ΔΕ ΦΑΥΛΑΣ, .ΩΣ ΑΓΝΟΥΝΤΙ ΦΥΣΙΝ ΗΜΕΡΑΣ ΑΠΑΣΑΣ ΜΙΑΝ ΟΥΣΑΝ (106)

The superstitious Romans developed their dies fasti and dies nefasti into a calendar so complex that half the year was inertized as non-work days in one way or another. In a time of severe overpopulation this might have some reason, but that was probably not the thought in mind. In fact the day of rest or Sabbath is a psychologically and medically reasonable invention.

But Heraclitus' indication of Hesiod is probably more factual, since Heraclitus sees day and night as the same basic secondary factor. The gradation of day into night also points to a single graduated phenomenon, and this may have been what Heraclitus was indicating as evidence for one continuous process.

95. The Ephesians had better go hang themselves, every man of them, and leave their city to be governed by youngsters, for they have banished Hermadorus, the finest man among them, declaring: "Let us not have anyone among us who excels the rest. There should be such a one, let him go and live elsewhere."

ἀξιὸν Ἐφεσίοις ἠβηδὸν ἀπάγξασθαι πᾶσι καὶ τοῖς ἀνήβοις τὴν πόλιν καταλιπεῖν, οἵτινες Ἑρμόδωρον ἄνδρα ἐωυτῶν ονήϊστον ἐξέβαλον φάντες --- ἡμεῶν μὴδε εἰς ονήϊστος ἔστω, εἰ δε μὴ, ἄλλη τε καὶ μετ' ἄλλων (121)

Read this one with care! When Robert Oppenheimer warned us about the dangers of atomic power, he was removed from his files and from authority and banished to an administrative position at Princeton. Just so in many a college the brightest minds are pruned off in the tenure review and driven into exile, since the egalitarian academic society feels uncomfortable with excellence. We all are aware of the ultra-conservative role of the ancient Philistines, but we fail to see that the Ephesians are still with us everywhere.

96. May you have plenty of wealth, you men of Ephesus, in order that you may be punished for your evil ways (125a)

*μη επίλιποι ὑμᾶς πλοῦτος, Εφεσιοι, ἵν' ἐξελέγχοισθε
πονηρευόμενοι*

97. After birth men have the wish to live and to accept their dooms; then they leave behind them children to become dooms in their turn.

*γενόμενοι ζῶειν ἐθέλουσι μόρους τ' ἔχειν, μᾶλλον δε
ἀναπαύεσθαι, καὶ παῖδας καταλείπουσι μόρους
γενέσθαι(20)*

The Old Testament had said that the sins of the father are transferred to the sons in a social setting by generations. But as we know more about the workings of society, are we going to find inherited characteristics or socially enforced modes of behavior, whether good or bad, which become patterns for future generations. I think Heraclitus' term "doom" means nothing more than "dominant pattern", as in "Greater dooms win greater destinies" (above) . Always when dealing with Greek texts always remember that translated words are only approximations and leave a trail of questions behind.

THIS PARADOXICAL UNIVERSE

98. Opposition brings concord. Out of discord comes the fairest harmony.

το αντίξουν συμφέρον και εκ τῶν διαφερόντων καλλίστην ἄρμονίαν (8)

With music, you cannot have harmony with one pitch. The Greeks were fascinated by the mathematical ratios of the motion of the planets, and conceived of an idea they called Harmony of the Spheres, which Pythagoras mentions in the Counsels long before Heraclitus. The odd thing is that Greek music was that it was not harmonic from the little we know about it; the music accompaniments to the choral odes in drama were monophonic with timbres arising from different partials of the many voices, not unlike Gregorian chant. But this fragment seems to be thinking of harmony in our sense!

Of course this fragment needs only indirectly to refer to music. Heraclitus had already stated in his doctrine of opposites the pairs of opposite factors which constitute our universe. Here is a critical rubric to that doctrine, that there is a fitting-together, a Harmony or concord between the poles of the pairs, on the highest level of interpretation.

99. It is by disease that health is pleasant, by evil that good is pleasant, by hunger satiety, by weariness rest.

νοῦσος ὑγείην ἐποίησεν ἡδὺν καὶ ἀγαθόν, λιμὸς κόρον, κάματος ἀνάπαυσιν (111)

This Doctrine of Opposites is critical to Heraclitus' thinking and turns up again and again in different words throughout these pages. This should be taken as a set of formal word-thought pairs seen as variants based on a single concept, and it is the resolutions of these pairs into points that he seems interested to pursue. Of course we know in ordinary and daily terms that day and night are quite different, but that does not mean they are entirely different kinds of phenomena. Heraclitus' whole outlook verges towards simplification of entities: Pairs are one concept, just as the material of our universe is really One Thing operating in some indefinite way behind the scenes. There things only seems mysterious because we are not attuned to perceiving them!

100. Men would not have known the name of Justice (dike) if these things had not occurred.

Δίκης ὄνομα οὐκ ἀν ἤιδεσαν εἰ ταῦτα μὴ ἦν (23)

The question here is what he meant by the word "tauta" as "these things". It would seem that injustice was being discussed, and Heraclitus reasoned that were there no injustices, then the concept of Justice as dike would never have arisen. Diels-Kranz takes it this way in the German translation, but with a question mark. But if tauta were originally touto "this thing", then it could mean that the concept of Dike is primary, and could not have been conceived or invented if the idea did not exist in the first place. But this is not firm and based on a change of the text, never a good idea. Yet in Greek neuter plurals can be used for single things.....

101. Sea water is at once very pure and very foul: it is drinkable and healthful for fishes, but undrinkable and deadly for men.

*θάλασσα ὕδωρ καθαρῶτατον και μιαρῶτατον ιχθύσι μιν
πότιμον και σωτήριον ἀνθρώποις δε ἀποτον και ολέθριον
(61)*

Speaking of sea water, he understands that values are relative to persons and situations, that much of our information about the world is relative under the general heading of the Logos.

102. Donkeys would prefer hay to gold.

όνους συρματ' αν ελέσθαι μάλλον η χρυσόν (9)

And many if not most men would prefer gold to wisdom, which is what Heraclitus is intimating. In our Post Industrial world it is increasingly clear that knowledge is mainly appreciated if it contributes to income. Our colleges are veering more and more toward "the practical", which is not unreasonable in a highly competitive society where the bottom line seems to rule absolutely. The real danger is to forget the world of ideas, and this is nowhere more critical than in science, where funded research comes first, while pure research is left in the files.

103. Pigs wash in mud, and domestic fowls in dust or ashes.

Columella VIII 4 si modo credimus Ephesio Heraclito qui ait sues caeno, cohortales aves pulvere vel cinere lavari.(37)

But there are reasons for this, skin protection against insect bites by a thick layer of dried mud or birds suffocating them with particulate matter. We have gone the wrong road with DDT.

It is no surprise to find the Roman agricultural writer Columella aware of the sayings of Heraclitus, since by his time the old Hellenic culture had been absorbed into a synthesizing Greco-Roman way of thinking. In this process much was gained in the distribution of Hellenic ideas throughout the vast Mediterranean world, but a good deal of the edge and inventiveness of the Greeks was lost in the process. Americans are in many ways much like Romans in their sense of practical wisdom, and although always appreciative of Hellenism, they tend to be somewhat cautious if not leery of the implications of the abstract realms of Hellenic thinking.

104. The handsomest ape is ugly compared with humankind; the wisest man appears as an ape when compared with a god --- in wisdom, in beauty, and in all other ways.

πιθήκος ὁ κάλλιστος αἰσχρὸς ἀνθρώπων γένει συμβάλλειν

ἀνθρώπον ὁ σοφώτατος πρὸς θεὸν πίθηκος φανεῖται καὶ σοφίαι καὶ κάλλει καὶ τοῖς ἀλλοῖς πᾶσιν
(82, 83)

Both the above quotations are from Plato. Locke has put it that the difference between the highest and lowest human mind is not great, but it does seem that the diversity of these two extremes can be extreme. This may be in partly the result of effort, opportunity and luck.

105. Man is regarded as childish by a spirit (daemon), just as a boy is by a man.

ἀνηρ νήπιος ἤκουσε πρὸς δαίμονος ὅκοσπερ παῖς πρὸς ἀνδρός(79)

106. To God all things are beautiful, good, and right. Men, on the other hand, deem some things right and others wrong.

τῶι μὲν θεῶι καλὰ πάντα καὶ δίκαια, ἄνθρωποι δὲ ἅ μὲν ἀδίκᾳ ὑπειλήασιν ἅ δὲ δίκαια(102)

The Christian apologists attacked Heraclitus on the grounds that he dismissed the difference between good and bad, hence was basically immoral. His thought was of course an extension of the doctrine of opposites, up and down, high and low. This even finds a place in Euclid's geometry: That which is equal can only be deduced by proving the impossibility of it being more or less, so "equality" is a center point in a more/less continuum between polar ends.

107. Doctors cut, burn, and torture the sick, and then demand of them an undeserved fee for such services. They are treating the same things, the (good) cures and diseases.

οἱ γοῦν ἰατροὶ τέμνοντες καίοντεςεπαιτέονται μηδεν ἄξιον μισθον λαμβάνειν.ταῦτα εργαζόμενοι, τα αγαθα και τας νόσους. (58)

This sounds at first reading like the typical ancient (and modern) attack on the medical profession. Cf. Petronius: *medici nihil aliud sunt quam consolatio animi*. But the second phrase gets the Heraclitan meaning clearly: The cure and the disease are part of the same phenomenon which they are treating.

Ancient writings are full of remarks about doctors, a trait which has not disappeared in our time. Certainly Heraclitus is thinking of the fact that we are, to paraphrase his words, driven with a blow to the doctor. What we want is not what we need and in medicine sometimes not what we get in a world where the cure may be worse than the disease!

108. The way up and the way down are one and the same.

ὁδος ἄνω κάτω μία και ωυτή (60)

Again the relative opposites with opposed poles, and great similarity at the slope of the continuum which stretches between them. Burns: You take the high road...etc.

109. In the circumference of the circle the beginning and the end are common.

ξυνον αρχη και πέρας επι κύκλου περιφερείας (103)

Aristotle noted the circle as the perfect motion for this very reason that it is circular, i.e. without ends and limits. In the final analysis everything curves, although we humans prefer straight lines with finite ends, perhaps echoing our lives. No wonder that recycling of souls has taken such a firm hold on many societies. Compare in another setting the Indian figure of the snake swallowing its own tail, and mathematical statements of the same figure in a different matrix.

110. Into the same rivers we step and do not step. We exist and we do not exist.

ποταμοίς τοῖς αὐτοῖς εμβαινομέν δε και ουκ εμβαινομεν, εἶμεν δε και ουτ εἶμεν (49a)

This presses the figure of the river one step further. It is not only a different river, but the WE is different from day to day, and furthermore the WE fluctuates between being and not being. This posits a continuum between what IS and what is NOT, which Parmenides has tried to answer by saying: Deal with what is as IS, and what is not, as IS NOT. Whether the problem has been solved to date, is and also is not clear.

111 For the wool-carder the straight and the winding way are one and the same.

γναφείωι ὁδος ευθεια και σκολιή μία εστι και ἡ αυτη (59)

112. Joints are at once a unitary whole and not a unitary whole. To be in agreement is to differ, the concord-ant is the discord-ant. From many things comes oneness, and out of oneness come the many things.

συνάψεις ὅλα και ουκ ὅλα , συμφερόμενον διαφερόμενον, συνᾶιδον διᾶιδον, εκ πάντων ἐν και εξ ἑνος πάντα (10)

This quote is from Aristotle de Mundo 5.396b where he is discussing anatomy and the parts of the body as assembled from separate design into a unitary whole. He goes into biological details carefully before reaching the above quoted sentence. So when he says "Joints" he is referring to parts of the body, although Heraclitus was thinking abstractly and taking the remark in a double sense.

This is becoming an important matter of discussion in the left rim of modern medicine. Are we right in thinking of organs as individual parts, like parts in a car, which can be replaced with the proper part? Do organs have individual functions? Chinese medicine long ago, lacking even precise information about the parts which they refused to dissect, saw that a body is a unitary whole, in which each part works with and depends on the simultaneous function of all the other parts. The organs are symbiotic and synergistic. It is wonderful that some can be actually replaced from cadavers, but that is child's work compared to the original design and operation of a complete living animal.

But Heraclitus adds to his basic One/Many theory in this sentence an appeal to music, since the words di-aiedon and sun-aiedon are formed from the verb aeid-ein "to sing". The poets are aidoi or "singers" but that is on the basis of Greek poetry being sung with choral or instrument accompaniment.

113. It is one and the same thing to be living and dead, awake or asleep, young or old. The former aspect in each case becomes the latter, and the latter becomes the former, by sudden unexpected reversal

*ταυτό τ' ἐνὶ ζῶν καὶ τεθνηκός καὶ ἐγρηγορός καὶ καθεῦδον
καὶ νέον καὶ γηραιόν. τάδε γὰρ μεταπεσόντα ἐκεῖνά ἐστι,
κακεῖνα μεταπεσόντα ταῦτα (88)*

We have no problem with the young becoming old, or with the living become dead, but the reversal which Heraclitus states is not as clear. He must be referring to Indian metempsychosis, which is not surprising since there are many Indian traits which run through his thinking. But Indian reincarnation has a structure of its own in Hindu and Buddhist thought, and that is different from what we have here.

Heraclitus and especially Pythagoras must have had experience in India, as Sri Aurobindo and many Indian scholars have asserted. Western scholars have long refused to believe that the Greeks derived much from the East, but this is changing with new work in archaeology, the history of metals and agriculture, and the study of motifs in design. More is to be seen!

114. Hesiod, whom so many accept as their wise teacher, did not even understand the nature of day and night, for they are one.

*διδάκαλος δε πλείστων Ησίοδος. . τούτον επίστανται
πλείστα ειδέναι, ὅστις ημέρην και ευφρόνην ουκ εγίν-
ωσκειν. ἔστι γαρ ἓν (57)*

115. The name of the bow is life, but its work is death.

τῶι οὖν τόξωι ὄνομα βίος, ἔργον δε θάνατος (48)

A trick with words for the Greek speaker: There are two words which are identical, one is "bow" which kills, the other is "life". But behind the scene lies a Heraclitan pair of opposites, life and death having the same word in fact! This might make a better Shakespearean style pun than a point in a philosophical discourse.

116. The hidden harmony is better than the obvious.

ἄρμονίη αφανης φανερῆς κρείττων (54)

This is a wonderful perception, good for thought in life, in scientific research (e.g. DNA vs. physical appearance) and incidentally in music where the dissonance and deceptive cadence gives us something more than straight harmonic progressions by the book.

117. People do not understand how that which is at variance with itself agrees with itself. There is a harmony in the bending back, as in the cases of the bow and the lyre.

ου συνιᾶσιν ὅκως διαφερόμενον ἑωυτῶι ὁμολογέει. παλίν-τροπος (εστιν). ἄρμονίη ὄκοσπερ τόξου και λύρης (51)

Apparently he is thinking of the bent archery bow going through a cycle of motion as the string is pulled back, then it goes forward through the centerline to hurl the arrow, then returns to centerline. This is exactly the same for the string of the lyre, except this has a frequency of cycles which we can hear and call a musical tone, whereas the bow's frequency is 1Hz initially and perhaps a few additional cycles to disperse the total of the string's energy.

118. Listening not to me but to the Logos, it is wise to acknowledge that all things are one.

ουκ εμου̇ αλλα του̇ λόγου ακούσαντας ὁμολογεῖν σοφόν εστιν ἔν πάντα εἶναι (50)

This is an iteration of the topic! At the start of the 20th century this would have seemed a piece of academic tomfoolery, but as the century ends and we are confronted by whole-istic or holistic experiences on every side, it does seem that Heraclitus was hinting at something of importance.

119. Wisdom is one and unique; it is desires and yet does not desire the name of Zeus.

έν το σόφον μούνον λέγεσθα. ουκ εθέλει και εθέλει Ζηνος όνομα (32)

Heraclitus seems quite clear about keeping philosophy and religion in two separate camps, often censuring popular religious practices as foolish or even evil, yet at the same time recognizing that there is something in thought which calls for a higher kind of Mind. Whether this is to be identified with Zeus or God is questionable, sometimes he sees the connection, sometimes not. But this is not on the level of American separation of Church and State, which has political roots back from the Reformation and English State Religion abuses for centuries.

120. Wisdom is one ---- to know the intelligence which steers all things through all things.

γαρ έν το σόφον, επίστασθαι γνώμην ότέη εκυβέρνησε πάντα δια πάντω (41)

We had this phrase before, the steering of all things through all things, a wonderful insight into the multiple interlocking avenues by which things (more complex than we had thought) can contrive to happen. The modern world knows at last in the field of genetics that there is something doing the steering of complex webs of chemical-electrical exchanges, we know there is some Logos or Pattern, but we can not yet imagine what it actually is.

121. God is day and night, winter and summer, war and peace, satiety But he undergoes transformations, just as (fire) when combined with incenses, is named according to the particular aroma which it gives off.

ό θεος ημέρη εύρόνη, χειμων θέρος, πόλεμος ειρήνη, κόρος λιμός. αλλοιούται δε όκοσπερ [ριϋ], όκοταν ουμιγῆι θυώμασιν, ονομάζεται καθ' ήδονήν εκάστου (67)

There are two problems with this quotation. In the second line something is clearly missing after "like", on grammatical grounds. The best suggestion seems to depend on there being originally two words which had phonetic similarity (ὅκοσper pur). By haplography or single reading of two similar syllables, the "pur" following "per" was omitted, and thus the sentences lost its subject πῦρ as Fire. With this not unreasonable emendation, we get a meaning for the sentence, and this has been widely accepted.

However now that we have a readable sentence, we don't know what it means! In the first line we were talking about complementary opposites as Heraclitus often does. But then he says that a change is made, as when fire is combined with incense, as an example of mutual combinatory change. The fire lights the incense and disappears as fire, as the incense material emits smoke and eventually turns to pure smoke as cake or liquid disappear. So fire and incense, here for the sake of the argument seen as complementary opposites, both disappear. So far so good, but the closing phrase is even harder to grasp: It (the smoke?) is named according to the aroma of each. The word ἡδονή is used by the Ionian philosophers for "flavor, taste", which we can extend to "aroma" based on our knowledge of the human apparatus for distinguishing smell. So we have a meaning here too.

But what the meaning actually is remains unclear. Best way is to see "each" as referring to "each kind of incense" since it can't refer to fire. Now we can summarize and say:

At altar ceremony, there will be odorless fire, which combines with odorless incense cake, producing in combination something else as an aroma, which arises from the specific nature of the incense being used. In other words, two odorless things, seen here as often as a pair can combine to produce something else. Summarizing the summary: a) fire and b) incense #5 ---> odor #5.

I am not satisfied, perhaps there is something else to this quotation, if so it will be up to someone else to ponder the words further and see what can be elicited.

122. The sun will not overstep his measures; if he were to do so, the Erinnyes, fiends of Justice, would seek him out for punishment

*ἥλιος γὰρ οὐχ ὑπερβήσεται μέτρα Εριννυες μιν Δίκης
επίκουροι εξευρήσουσιν. (94)*

There is a natural order to things, a hard Necessity which orders data. This might be seen as a higher level of Natural Law than we are accustomed to think of in our social-based thinking, since we believe more and more since the 17th century investigators that Science is the tool to control and convert the process of nature for human use.

We have in this last century succeeded in forcing electrons out of their natural measures by means of overpowering forces, releasing giant forces which we are not in a position to regulate or utilize properly. If cracking uranium can be seen as overstepping the measure of its natural life span, the Erinnyes may soon be in order to seek us out for punishment. The following quotation seems to offer a comment on this situation.

123. ...the seasons which carry all things along. (100)

.....ώρας αἰ πάντα φέρουσι.

This is cryptic. This comes to us via Plutarch's discussion in the *Quaestiones Platonicae* 8,4 under *Periodous* as rotations, and was talking about the sun which measures out, regulates and designates the changes and "seasons, which carry all things". Heraclitus must have been thinking of Time as one of the major functions of all phenomena, a better thought that Plutarch probably realized.

124. Even sleepers are workers and collaborators in what goes on in the universe

ΤΟΥΣ ΚΑΘΕΥΔΟΝΤΑΣΕΡΓΑΤΑΣ ΕΙΝΑΙ.....ΚΑΙ ΣΥΝΕΡΓΟΥΣ ΤΩΝ ΕΝ ΤΩΙ ΚΟΣΜΩΙ ΓΙΓΝΟΜΕΝΩΝ (75)

Since everything in the world is a part of the total kosmos, a passive participant is just as much a participant as an active one. Compare the Zen notion, that doing nothing is also doing something, that being is being a part of the whole, in which there is no need to do anything special. And this is found elsewhere, as Jesus' remark: "Consider the lilies of the field, they do not spin....."

125. Of things which involve sight, hearing and knowledge, these I especially respect.

ὄκοσων ὄψις ἀκὴ μάθησις ταῦτα ἐγὼ προτίμειω

Heraclitus had spoken above about the value of seeing something yourself (autopsia), about eyes and ears being good witnesses, about eyes being better witnesses than ears, all which he sums up neatly here. But he adds one critical element to the list: Mathesis or "understanding", which can stand as a very apt and meaningful final remark to conclude this long list of the scattered fragmentary remarks of the Greek philosopher Heraclitus, who is after all much more logical and intelligent than Aristotle thought, when he dubbed him *ὁ σκοτεινός*. as Heraclitus the Obscure.

It is finally Mathesis as active understanding which makes the difference between trying to grasp the shape and the sense of the Kosmos, as against missing the search in an uneventful hypnotic cloud of sleep. There is plenty of room for the sleepers, but the real need is for the thinkers like Heraclitus