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Anaximander of Miletus, second after Thales of the so-called Ionian naturalists (physiologoi), is generally looked upon as the first real philosopher and his thought as the watershed in the transition from myth to philosophy, the transition whereby a so-called rational account of the world takes the place of a so-called irrational one. Although Thales preceded Anaximander, and was, it is said, his teacher, Thales is seen more as a legendary sage than a speculative thinker. The distinction is a slightly arbitrary one, however, cast as it is in the light of the modern disciplinary view of philosophy. Not only Thales but Anaximander too seems to have been active politically and architecturally as well as speculatively, for if Thales once changed the course of a river and was active in promoting Ionian unity, Anaximander, as I shall argue, built architectural models, and is said to have had a Miletian colonizing expedition to Spolonia on the Black Sea. Nevertheless, in the case of Anaximander, it is possible to piece together a cosmology—the very first Western cosmology—from Aristotle and the various commentaries, and this is something that simply cannot be done in the case of Thales. Moreover, although he has been credited with the authorship of a navigational treatise, no one word of Thales' own survives. For Anaximander, on the other hand, we have the By fragments from Simplicius' fifth-century AD commentary on the Physics of Aristotle, a fragment which, depending on how it is read, contains at least seventeen or at most fifty-six Greek words attributable to Anaximander himself. These seventeen to fifty-six words, coupled with the cosmology extrapolated from the commentaries, give a potentially coherent picture of Anaximander's world view, although it is one that depends heavily on imaginative interpretations.
As Kahn points out, the traditional reading of the fragment, from Aristotle in the sixteenth century, through Nietzsche and Heidegger in the nineteenth, to Burnt in the twentieth, has been that the Boundless (to aperieon) of the first part of the passage is the source out of which (to kata to chronos) he is, in the second part of the passage, existing things come to be, and into which (eis to to to) they also pass away, having made amends and given reparations to one another for their wrongdoing, "according to the ordinance of time." However, in this century it has been noted by Gregory Vlastos, among others, that the to aperieon, the "out of which," that introduces the second part of the passage is in the plural, whereas to aperieon, its alleged referent, is singular. This led Vlastos to postulate the Boundless as something "explicitly thought of as a plurality... a compound of opposites," which is difficult to make sense of both grammatically and semantically. In a later article, and presumably as a direct consequence of this thinking, Vlastos makes Anaximander's aperieon, for him the limitless fund of a plurality of undifferentiated stuff and the source of differentiated "existing things," into the speculative equivalent of Heraclitus's Chaos," which he also reads as an undifferentiated mixture. Vlastos has tended to oversimplify the issue. Chaos, whose coming to be (genesis) in Heraclitus's Doxography precedes the coming to be of Earth (Gaia) and Heraclitus's (Ouranos)," is not necessarily a mixture but appears to have been thought of as primordial gap. Moreover, if, as Aristotle says, to aperieon "encompasses and steer all things," its nature would appear to be at odds with that of Heraclitus's Chaos, whether it is taken as a mixture or a gap. In any event, the identification of causal or evolutionary antecedence, seldom brings one closer to a real understanding. But if to aperieon is not the referent for the relative pronoun "he in
the passage from Simplicius, if the Boundless is not what is referred to by the plural "what" out of which is the generation of existing things, what does the "hin" refer to?

Kahn argues that "hin" refers not to to operein but to to anata, the existing things themselves. These, he says, are not, as they have often been taken to be, individual beings, such as men and animals. Nor, he claims, are to anata the hypostatized, Aristotelian four elements Simplicius refers to at the conclusion of the passage, although Simplicius' evocation of the "change of the elements into one another" does indeed help to elucidate Anaximander's intentions. As Kahn reads the passage, to anata refers to the elemental qualities of hot, moist, cold, and dry, and even more generally to the changing seasons, as well as (by extension) to all natural cycles of birth, death, and regeneration. To extend Kahn's argument further, for Anaximander, to anata are the "existing things" of experience, as experienced. Their ceaseless cyclical movement (midas kinthi), whereby hot dies into cold and cold, in turn, into warm, moist into dry, and vice versa, the seed into the earth, which once more generates seed, dry into night, which dies into another dawn; and summer into winter, which expires at the inception of a new season of growth—these, collectively, are the generation and destruction "according to what needs must be [kata to chosos]" referred to in the fragment. They, the anata of experience, "make amends and give reparation to one another for their offense, according to the ordinance [nomos] which has also been translated as "assessment" or "order" at a time." Kahn's argument reflects an understanding of the qualitative, compact experience of a mythical world still unnoticed by the differentiating, Aristotelian classifications that color the commentaries, including 'Simplicius'. According to Kahn, analysis, the fragment makes no mention of things being generated nor of, or by, the operein. Furthermore, he gives a very credible account of Anaximander's "cosmos" as rooted in experience both of the natural and of the political order: a "universe governed by law," as he puts it.

I think Kahn is mistaken about the referent for the key word "hin" however. What his analysis of the grammar does is to split the direct quotation in half. With to anata as the referent for "hin," the part that begins to hin and ends kata tin tou chosos again, and deals with the qualitative elements that die into one another, becomes completely self-referential, with no connection to the first part of the passage: to the part that postulates "some different, boundless nature [hetera to physi operein] from which all the heavens arise and the kosmou within them." That there should be no connection between these two parts is extremely unlikely, especially since the two parts of the quotation are not even separated by a full stop but only by a half stop (transliterated as a semicolon).

Rather, if I would venture, the hin refers to kosmou, the plural noun immediately preceding it in the passage. If so, the following would be the sense of Simplicius' citation.

The archē ("beginning," not Aristotelian "materia principii") of all the elements (qualitative, not hypostatized, as Simplicius inevitably understands them) is not one of these elements themselves, but some different boundless nature [hetera to physi operein], from which all the heavens (aourous) arise, and the kosmou (orders) within these heavens. And the inclusiveness of the particle de signals a connection with what goes before—"not of these kosmou is the generation for, not of, existing things," and into these existing things destruction takes place according to what needs must be, for they (existing...
things, αὐτὰ) make amends and give ἀπολογία to one another for their wrongdoing (ἀδίκων) according to the order of time.

With ἀνασκόπησις taken as the referent for αὐτῷ, the whole passage attains a new coherence. Some boundless nature (physis) different from nature as the quality of experience, some other physis, gives rise to the heavens and the ἄνωτα within the heavens. It is these "orders," generated by a boundless source which, as is elsewhere attested, is all-encompassing and divine, that regulate and guide the ebb and flow of elements experienced as things coming to be and passing away. This other, boundless physis is the generation for the order of αὐτῷ. It does not generate "existing things" themselves because, as Anaximander stresses, generation and destruction take place kathα τοις χρόνοις, according to what needs must be, as, as Heidegger in his exegesis of Anaximander Bs translates it, "along the lines of usage."[1]

Now, a phrase that occurs frequently in Homer is ἄνωτα ἀνασκόπησις, according to order, but it is always qualified, either as αὐτῷ (not) ἀνασκόπησις (disorderly) or as αὐτῷ (well) ἀνασκόπησις (orderly). In the very form of the phrase there resides an implicit assumption of some standard by which orderliness can be attributed to things, a measure by which things are "well" according to order or "not" according to order. The Homeric ἀνασκόπησις helps to elucidate Anaximander's kathα τοις χρόνοις, while also expanding the sense of the entire passage.

The αὐτῷ, orders, that regulate generation and destruction regulate them inasmuch as ἀνασκόπησις are the measures in which the flux of qualitative αὐτῷ can be called well ordered. These ἀνασκόπησις do not control or determine the flow, since in the αὐτῷ of experience ebb and flow are disorderly, as the mention of their αὐτάκειον (wrongdoing, disorderliness) in the very next phrase of the passage stresses. Anaximander claims that out of ἀνασκόπησις is the genesis (coming to be) for existing things, and "into the foregoing" (ἐν αὐτῷ, referring collectively to ἀνασκόπησις, ἀνασκόπησις, and its physis αὐτῷ) destruction takes place kathα τοις χρόνοις. It is the polythetic choral of need/necessity/custom/usage, itself a feature of experience and rooted firmly in the human sphere, that discloses ἄνωτα as the genesis for αὐτῷ, and it is this that brings Heidegger's exploration to the conclusion that the ἀνασκόπησις of the Anaximander fragment contains the first word of being.[10]

Heidegger cuts the direct quotation from Anaximander down to a brief twelve words, dismissing even the traditionally accepted final kathα τοις χρόνοις ταύτα (according to the order, order, or assessment of time) as not archaic enough—"too Aristotelian in tone and structure to be genuine."[11] I would nevertheless recall a similar image of the court or judgment (dike) of Time which appears in a fragment of a poem by Solon,[12] written nearly a generation before Anaximander. For this reason, I think it is possible to allow Anaximander's χρόνοις ταύτα to stand. And indeed the evocation of the role played by time as the agent whose assessment reveals order is perfectly in keeping with Heidegger's own interpretation of τοις χρόνοις as "usage" rather than "necessity," since usage is usage only if revealed as such through time. With the χρόνοις ταύτα retained as integral to the fragment, it is even possible to reconcile the seeming disparity between Heidegger's interpretation of τοις χρόνοις as "usage" and the more traditional translation that reads τοις χρόνοις as "necessity," or "what needs must be."

The word for time in the fragment is χρόνος, a period of time,[13] a time with before, during, and after, a time that,
like the human life span, is essentially rectilinear. This sequential order is the basis of chronos, and it is an assessment immanent as it reveals the cyclical order, the ebb and flow of *aion*, discussed earlier. The *taos* of chronos reveals custom as a necessity immanent as sequential time necessarily makes its assessment of events as repeated or not repeated, as customary or not, as cyclical or not. Only human rectilinear time, by establishing what is beginning, middle, and end, can reveal the occurrence of a repeated beginning, a repeated middle, a repeated end. What is cyclical or repeated is necessary; what is unrepeatable, is not. It is rectilinear chronos which, as the arbiter or assessor of such necessity, determines what is *ek kata kosmos* and what is not. Chronos, sequential time, is the judge—both of earthly *chronos* and of heavenly *kosmos*, because it discloses the cyclical, regular movements of the celestial bodies. Reciprocally, the cycles of *kosmos* are what give *chronos* its measure: how many days (cycles of the sun), months (cycles of the moon), years (cycles of the seasons), etc. Chronos is the link that reveals both heavenly and earthly cycles as belonging to a single order, whose guide is some other boundless nature.

To recapitulate what has emerged from this reading thus far. Anaximander's universe is not yet hierarchical. He does indeed postulate a *hetera* of *physis* species, some other boundless nature as-coming-to-be, which encompasses and, like the helmsman of a ship, steers (kubernai) all things, giving rise to the heavens and the *kosmos* within them. But this boundless source is *hetera*, "other": it is unknown and unnamable. It is not, as the later commentators name it, *apeiron*, the Boundless. Although qualified as divine, it is also a quality, and as such a feature of experience, discovered through experience.

This other boundless nature is the source of the *kosmos* within the heavens, which in turn are the *genesis* for *aion* as the ebb and flow of hot, cold, moist, and dry dying into one another. This ebb and flow occurs according to usage, made recognizable as orderly or necessary by the assessment of time. As Anaximander speaks of it, the relationship between the *kosmos* within the heavens and necessary usage would appear to be reciprocal, with *chronos* *taos*, the order of rectilinear time, as the interpretive link between the two. The whole is an articulation of order in which the logic, far from being Aristotelian, is still very much rooted in what Jean-Pierre Vernant would call a "logic of ambiguity": the logic of compact, mythical experience articulated in terms that are at once the *genesis* for the differentiations of an entire Western tradition.

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Anaximander's Image of *Kosmos*

The *hetera* is, as well as other sources, attest that Anaximander spoke of order. And inasmuch as he spoke (rather than sang, as did the poets) of order, he was the first Greek writer of prose, which is to say that he wrote in the language of everyday speech. In other words, his medium, to paraphrase Heraclitus, involved the transcendence of a common or shared logos. Common or shared speech (everyday language), transcribed, is prose.

Anaximander not only spoke of order, he also, it would appear, built order: a model, about which very little is known, but whose several parts seem to have included a celestial sphere, a map of the world, and a gnôma.
Anaximander... was the first to discover a geōnaios, and he set one up on the pedestal in Smyrna... in mark solitudes and equinoxes; and he also constructed hour-indicators. He was the first to draw an outline (perimetron) of earth and sea, but also constructed a (celestial) globe (sphaira).

Now it is possible to do as most commentators do and consider these three artifacts separately, each as evidence of Anaximander's proto-scientific activity: respectively proto-astronomical, proto-geographical, and proto-chronometrical. But, as I have attempted to demonstrate, the experience of order articulated in Anaximander's Ek is essentially compact, and so, I would contend, is the single order manifested through his allegedly disparate scientific activities. Anaximander's model of several parts was, intentionally, a single undertaking.

Although Anaximander's Ek consists of only a few works that can be ascribed to Anaximander himself, this brief citation appears to have been part of a considerable body of written work, for in the tenth-century lexicographer Suda writes:

Anaximander first discovered the equinox and solstices and hour-indicators, and he made a model of the earth as the centre. He introduced the geōnaios and in general made known an order of geometry. He wrote On Nature (On the planets), Circuit of the Earth (On periods), and On the Fixed Stars (On the fixed stars). He also made a Celestial Globe (Sphaira) and other works.

Based on the assumption that in Miletus ca. 600 BCE there was a notion of physis (nature; the lived world) intersected with the notion of geōnaios (generation, emergence, being)...

W. A. Heidel has made an illuminating case for all these supposedly separate works actually being one book. In other words, if physis is geōnaios, then cosmology (or "astronomy"), geography, and history (or "chronometry"), being all peri physis, are all about coming-to-be, and are therefore essentially the same.

A similar unity of concept can be argued for the parts of Anaximander's built work—his model, as I have called it, even though its parts were built at different times, and probably constructed at different times and in different places, as the foregoing citation from Diogenes Laertius implies.

Anaximander did not, it would appear, invent either the map, the geōnaios, or the celestial sphere. The Babylonians, with whom the Ionians were in close contact, had long been active in astronomy, and there were Babylonian precedents for both the geōnaios and the map of the world. But the Babylonian ordering of the world was despotic and hierarchicaL, and indeed the cosmological ordering activity, as Jean-Pierre Vernant has noted, was integral to the role of the king. On the other hand, as the foregoing exploration of Anaximander's Ek suggests, the understanding that Anaximander articulates is of an order that emerges from a reciprocal, not a hierarchical, relationship between the heavenly and the human.

Anaximander made an image of a geōnaios, whose constituent parts were a celestial sphere, a map of the world, and a sun clock (geōnaios, "hour-indicators," equinoxes and solstices). The overall image, pieced together from the sources, was of a physical heaven made up of circular bands for planets, fixed stars, the moon, and, at the outer limit, for the sun. The earth in the shape of a column drum hung suspended at the center. The flat cylindrical earth, with a diameter three times its...
depth, stayed at the center by virtue of symmetry and balance, its equidistance from the outer edge preventing its fall in any given direction.

Theaíra

The image, as an image, for the first time presented xousas as a spectacle, a theaíra. That such an image put order on display, as it were, can be seen to underscore the view of Anaximander as presenting at the birth of theory. This is indeed so if one accepts the usual modern view which stresses the speculative, nonparticipatory side of theaíra, and interpolates, by reading backward, an assumed evolution from theory-as-contemplation to theory-as-opposed-to-practice. But there is another dimension to the whole question, for, when theory was born, Anaximander was not just the presiding midwife. He was also the baby.

In the life of a collective consciousness, the movement from compactness to differentiation is comparable to the birth and growth of an individual human being, who leaves the compactness of life in uterus, where child is mother and mother is child, to acquire an increasingly differentiated understanding of the world. In the absolute darkness of the womb the child can, at the most, have only four senses—taste, hearing, smell, and touch. Only at birth, with the first and most definite separation, the child acquire its fifth sense and begins to see.

This seeing, and the separation it presupposes, can be taken as emblematic of the birth of theory, for recent etymologies have shown, apparently with some conclusiveness, that the primary and original meaning of theaíra was that of tator. This modern claim is based on the derivation of theaíra from thea (see, spectacle), and baró (I see). Furthermore, theaíra were ambassdorous to sacred festivals who left (were separated from) their native city to attend festivities elsewhere, and the assumption has been that these ambassadors observed, but did not participate. But a closer look at the ancient sources shows that many theaíra did in fact participate by offering sacrifices, and by taking part in the dances and games.

It also is worth recalling that, while thea, with the accent on the first vowel, means seeing or spectacle, that, with the accent on the final vowel, meant goddess. Indeed the ancient etymologists, from Plutarch onward, usually supposed that the first part of the word theaíra was these, and that that was someone who performed service to, or had care for, a god. Moreover, the ancient etymologies, so readily dismissed by modern linguists, were much closer to the ancient experience than we are. The “seeing for a god” aspect of theaíra is especially evident when ancient sources use the word theaíra to refer to a person who goes to consult an oracle. Etymology is, at best, only a guide, and it is not possible to claim, as Hannelore Rauch does, that there is room for both gods and seeing in theaíra.

The child’s first gaze is a gate of wonder. In Homer, the verb-thanámaí, for which the noun thea (spectacle) is a cognate, means to gaze upon with wonder, to marvel at. The verb thanámaí (to wonder at, marvel) and the noun thanáma (a wonder, a marvel) are very closely related to thanámaí, for in Homer it is almost invariably what is seen that is wondered at; it is the eye that marvels.

Generally speaking, of two occasions: first, when the spectacle suggests an unusual divine presence, and second, when the sight beheld is...
of something particularly well made. These two instances are not unrelated.

Thus, in the Iliad, Priam marvels at Achilles “for he was like the gods to look upon,” and in the Odyssey, when in Book XXIV, Odysseus emerges from his bath when the goddess Athena has restored him and made him taller and mightier than before, “his dear son surveyed at him, seeing him in presence like unto the immortal Gods.” Athena’s too is the hidden divine presence at which, unwittingly, Telemachus marvels when he wonders at “the walls of the house and the fair beams and cross-beams of fire and the pillars... (which) glow in (his) eyes as with the light of a blazing fire.” The well-built house glows with the hidden presence of a goddess.

A stock phrase that occurs repeatedly in both the Iliad and the Odyssey is θαύμα ίδέονθαι, “a wonder to behold.” Now, absolutely without exception, every time Homer qualifies something as “a wonder to behold” the thing so qualified is a beautifully or divinely crafted piece of work. So, in the Iliad it is Hera’s chariot, with its bronze wheels whose spokes are of impenetrable gold, over which “tires of bronze are fitted,” a wonder to behold. The “A wonder to behold” is θαύμα ίδέονθαι, “wonderfully wrought with gold and silver,” and Poseidon’s armor, and Hephaestus’ automaton bronze triads that prop themselves about on wheels, and the walls of the Pharsalian city, and Aphrodite’s gown and the purple webs the Naiads weave on “long honeycomb stones” in a cave in Ithaca. In Hesiod’s Theogony, Pandora’s veil is a wonder to behold, as is her gold crown, on which is “much curious work [δεξιέστα πολιτά]”, for Hephaestus, in turn, made it, put on it most of the creatures “which the land and sea rear up... like living beings with voices.”

The Celestial Globe

Although there are several secondhand reports of Anaximander’s cosmology itself (reports taken to be based on his book or books), an almost total absence of sources makes it virtually impossible to affirm anything definitive about the celestial globe as a model, except that it existed and that it was an image of the heavens.

Assuming its three-dimensional existence, one might conjecture that it was, at least in part, built of metal, since...
curves, generally speaking, are easier to work in metal than in wood. Hammered bronze was a well-known medium in archaic Greece, where hammered bronze tripods, which had hemispherical basins, were highly valued. A hoplite's armor, where a proper fit was essential, was also of hammered bronze, and his helmet, a nearly spherical affair with nose and cheek pieces, was sometimes even hammered out of a single sheet of the metal.8

One might also conjecture that Anaximander's sphere was an assembly of several parts, since solar, lunar, stellar, and planetary rings figure largely in all reports of his cosmology. These rings, like the felix (apparatus) of chariot wheels to which they were compared,9 may, in the model, have been all metal, or may have been wood rimmed with bronze. The felix of wooden wheels are quite complex to make, being constructed of several pieces of curved wood which must fit together exactly in order to form the required circle. The rings, according to the sources, were supposed to have been bolted and full of fire, with apertures or "breathing-holes" (apertures through which the fire showed to appear as the heavenly bodies.

However much, or little, of the reported cosmology appeared as literally represented in the model, it would have been a complex assembly requiring a careful adjustment of parts. The model may even, conceivably, have been rotat-

cal with moving components, but even if its parts did themselves move, much of the points of its construction would have been to reveal, by arresting them, the movements of heavenly bodies.

When Vitruvius, whose sources as we know were not those of the universe (mundus, which is how the Latin lated kosmos), his terms reflect those of the cosmology whose verse first appeared in Anaximander's model.

The universe is the entire compass of all nature and the configuration of the heaven with its stars. It rolls continually round the earth and sea, in the same spaces of its axis. For the same power (as work) in these places is architectural, since it has set up posts to act as centric . . . and there around these posts it has constructed the rim of whose which the Greeks call apsidal through which the heavens roll eternally as on a lathe. In the middle thereof the earth and sea are naturally located in the central place.9

Vitruvius, of course, is an architectural treatise and this passage appears at the beginning of his ninth book, which deals with architecture, the construction of clocks, the second of the three parts of architecture, which also includes building (aedificium) and machinery (machinae).

**The Map**

It is with some hesitation that I use the word "map" to refer to Anaximander's image of the earth's surface. The ancient sources use the word plana, which can mean tablet, chart, or simply plain, when they refer to the antique itself, and geopoeic, circuit of the earth, or way, path, or traveling (roads) around the earth, when they refer to the geography. "Map" is perhaps too modern, but, unfortunately, discussion becomes very difficult if its use is avoided. This said, there is slightly more information about Anaximander's "map" than there is about

9. Vitruvius, *De Architectura,* Book III, Chapter XVIII.
make his map, Anaximander would have, so to speak, sliced off the askomenoi, the walked-upon surface, from the cylinder, i.e., the map was indeed round, something Herodotus, in the fifth century, found a matter for ridicule:

I laugh when I see that many have drawn circuits of the earth (gen periodou) and none of them has explored the matter sensibly; they drew (diagrammata) running around the earth, which is round as if turned on a lathe (mean kukistera hip apo tornoi), and they made Asia equal to Europe.48

The column drums of the sixth-century Heraion in neighboring Samos, just across the bay from Miletus, were turned on a lathe, and the proportion of their diameters to their thickness was roughly three to one, as it was for Anaximander’s cylindrical earth.

Whether the tablet (pínos) on which the round askomenoi appeared was itself round is difficult to determine. Pินος, in Homer, are platters on which food is served, but they are also the planks of ships.49 Herodotus tells of a chalkheí pínos, a bronze map, that Aristogoras of Miletus brought to Sparta in 499-498 B.C., in order to persuade the Spartans to help in the Ionian revolt against the Persians. Aristogoras used the pínos, on which was cut (metrikó) the circuit of the entire earth the whole sea and all the rivers, to show Cleomenes, the Spartan king, the rich lands at the back of Ionia and also to locate Sestos where, he said, the Spartans would find the great king’s treasure.50 Aristogoras’ mission from Miletus took place about sixty years after Anaximander’s flourishes, and the only documented precedent for the chalkheí pínos. Herodotus speaks of are the maps of Anaximander and Hec-
tara, who, like Aristogoras, were both Milesians. Given the
shortness of the tradition, it is unlikely that the pinax Arist-
ogoras brought to Sparta would have been bronze but its pre-
decessors been painted or drawn on wood. If so, the earlier
maps too must have been bronze. It is even possible that the
pinax Aristasgoras brought to Sparta may have actually been one
of the two known earlier pinakes.86

To assume that Anaximander’s pinax was bronze is not
to assume that it was solid bronze. More probably, it would
have been of composite construction, like the hoplon, the great
round shields, that were the salient, eponymous feature of
a hoplon’s armor. These were constructed out of wood, faced
with bronze and embellished with cut-out insignia, or em-
graved.87 It seems to me that Anaximander’s map must have
been very much like a shield, which is something that would
account for a rather contentious phrase in one of the sources.

Hippolytus says that the schíma (form, shape) of An-
aximander’s earth is “gūren” [curved, like a hook, or with
hunched shoulders], stegopulon [rounded, resembling a
hollow drum.” Kirk, Raven and Schofield take gūren to refer
to the circumference, or circular section, of the column of
earth, with stegopulon as a gloss on gūren. Diels, however, real-
izes the pronoun as convex, and took it to refer to the earth’s surface
as convex, and it was the center, with Hellas
as convex, and it was the center of the earth. The earth was
ampelas, the convex horn or knob, at the center of the earth
before Anaximander, Thales had claimed that the earth
was in the Olympos, amphiolos (tholos), the vault of the
horns of the Olympos, amphiolos tholos, the vault of the
horns of the Olympos; the crenelated, horned,88 and the hoplon

86
Anaximander and the Anaximander of Okeanos

87
Anaximander’s Epic of Kerman

88
Hippolytus being poked into battle.

Running on the Greece-Cyprus Chiliote c spindle
at the Ville Gauthier, Rome, ca. 640-430 B.C.
their request, left his home for ten years and set out on a voyage to see the world, and the single Greek word, repeated again a few lines later, that is covered in the English translations by “to see the world” is theoria. Solon left Athens to "go on a tour," to be a theoria. Seen in the light of the later discussion of theoria, Solon, as a traveler, was both a speculator and a servant of the gods. Seeing the world for a Greek in the sixth century, meant viewing and wandering at the surface of physis/gnosis that shimmered in the blessed light, an undertaking no doubt understood as comporting with the nature to a sacred embassy (theina) to Delphi or Olympia.

When Hecataeus brought Anaximander’s map into possession, he did not necessarily make a more exact representation of a more accurately scaled copy, of an earth viewed on his travels. Whether on foot, under sail, or on horseback, the rigors of sixth-century c.e. travel would, one must imagine, have made a theoria of the kind undertaken by Solon or Hecataeus highly participatory. And never, in the terms the sources actually used, was a map simply a representation of ge. What is today called a map, as has been noted, was spoken of as a ge períades, a circuit of, or journey around, the earth, engraved or cut out on a pinaki, on a tablet. The terms reveal mapmaking as an attempt to somehow arrest or make manifest the traveling itself, an effort to capture in an artifact the relationship between an earth still perceived as divine and alive and the human experience of journeying over her surface.

It is generally assumed that Hecataeus’ perfection of Anaximander’s map entailed the drawing of another, more accurate map, based on the earlier one which served as a model. However, if Anaximander’s map was an assembly, constructed along the lines of a hoplite shield, with bronze plates fixed to a wooden backing, then the diktria or atlas, the perfecting, of the earlier map may very well have been just that: the removal of certain pieces, the making of shiner, newer ones, and the more perfect arrangement of the entire assembly so that, as Aphaemenes attests, “it became a thing to be wondered at.”

When Aristagoras went to Sparta to persuade Cleomenes to help the Ionians win their freedom, his tactic was an appeal to Cleomenes’ greed. The lands at the back of Ionia were rich, and neither east the Spartans would find the treasure of the king. Aristagoras brought along a chrestikos pinaxis to make this abundantly clear, and as long as the map sustained his plea, Cleomenes changed his mind. The map convinced him not, I would say, since accurate directions for getting to the treasure,
for two days later, when Aristogoras was forced to tell Cleomenes that Saus and its treasure were three months' journey distant (something the map had failed to reveal), Cleomenes lost his temper and dismissed Aristogoras summarily. Cleomenes was at first consoled because the map was \textit{thauuma}
\textit{diskos}, "a wonder to behold," to use Homer's phrase, and because, as such, it made evident, by sharing their very identity, the splendor of oriental lands and their amazing wealth.

The Temporal Complex: The \textit{Gnomon}

For all that the \textit{chalektos pinos} Aristogoras brought to Saus was, as a gift \textit{periodos}, an image of travel, it failed to reveal Cleomenes how long it would take the Spartans to get to Saus. The map did not, could not, reproduce time. Besides celestial globe and the map, Anaximander's model, his idea of \textit{haima}, needed yet another component to be complete.

Earlier it was noted that, in Achilles' shield, Hephaestus wrought both the heavens and the earth, whereas Anaximander's shield, if his \textit{pinos} was indeed a shield, carried an image of the \textit{enhoos}, the inhabited earth, with the dead accounted for in a separate model. Achilles' shield is entirely a temporal construction, since, except for the flowing oceans around its edge, there is no way of actually seeing any of the many narratives Homer says Hephaestus wove into the shield's five-layered surface. The shield is meant to encompass mythical experience. In it, the bounding horizon of human experience, encompassed in earth and time. There is nothing outside the shield.

Although Anaximander's intentionality was not an artifact, it needed three pins for Homer's one copy: one pin goes at right angles to a sun clock, a
vertical whose shadow indicates the sun's direction and height. A 
gnomin, however, it is also a set square, or any vertical rod.
and the suggestion seems to be that the generic feature of what 
the Greeks called a gnomin was orthogonality; the correct 
relationship between vertical and horizontal.

But the word gnomin derives from the verb gigno (I 
know), and the textual evidence indicates that, while the 
Greeks used it to speak of uprights, they also used it to speak 
of people: of the person who knows, the one who discerns.
The noun gnomin does not appear in Homer, but the verb 
gigno does, and in almost all cases the knowing so referred to 
is knowing in the sense of the ability to recognize and 
interpret certain signs. Thus, for example, in Book VII of the 
Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, Iliad, and the heroi 
... had the lot therein; and Ajax knew [gnos] at a glance the 
recognize and was able to interpret the significance of the 
mark with his sign. Similarly, in the Odyssey, Halschersen 
said to have “surpassed all men of his day in knowledge 
[hetai gnomos] and uttering words of fate.” [12] Birds, 
course, are omens,” and the person who knows birds recog-
nizes birds as omens. To know birds is to know which 
omens (not all birds are) and, when they are, to be able to 
others what their significance is. The knower is in both 
examples a mediator of signs, and Homeric usage thus 
suggests that to know as gnomin is different from know-
ing gnomin (having seen) or knowing in episthela (having 
A single passage in the Odyssey uses all three verbs 
knowing, and differentiates their meanings quite well. 
Odysseus of the many wise answered her (Athena) and 

Old is it goddess, for a mortal man to know [gnos] 
oue, interpret] thee when he meets thee, how knowing 
[episthela, having skill] so ever he be, for thou takest what 
shape thou wilt. But this I know well [no side, I saw well, 
have certain knowledge], that of old thou wast kindly to me.” [13] 
In Greek, the aorist tense of the verb homos (I saw) is 
side (I saw), and means “I know.” What is known for certain is 
something that has been seen. [14] 

The word gnomin as knowing thing, whether person or 
set square, is post-Homeric. In Asclepy’s Agamemnon, a gnomin 
is a person, an interpreter of omens, [15] of divine utterances 
or prophecies, which is to say a human link between heaven 
and earth. It is difficult, and perhaps not even very important, 
to establish which usage, person or set square, came first. 
Thucydides uses gnomin to refer to a set square, or carpenter’s 
square, in the mid-sixth century B.C., and Asclepy uses it for 
interpreter at the beginning of the fifth. Whether a sundial 
was called a gnomin when it was first introduced to Greece 
is impossible to establish, since the Herodotus citation dates 
from the late fifth century, over a century after Agamemnon.

However, if uprightness had been the sole critical feature of 
sundial pointers or set squares, they would probably have been 
called something other than gnomin to orthos, a straight-up 
thing, might, for example, have been a conceivable alternative. 
But the early Greek understanding was that uprightness, the 
relationship of vertical to horizontal, which is the relationship 
of the human body to the earth, had to do with knowledge as 
the recognition and interpretation of signs. As Vitruvius notes, 
people walk ‘not with head down, but upright,’ and it is the 
orthogonality of human posture that makes the human person 
link between heaven and earth, that places him in the 
appropriate position of being able to ‘look upon the magnificence 
world and of the stars.’ [15]
With the sundial, the significance of the gnomon as the spirit-mediator of knowledge through interpretation becomes very explicit. If the sun's position at the equinoxes and solstices is to be accurately marked on the sundial's pavement, the pin must be set up at exactly 90 degrees to the ground, and the ground must be level. Theophrastus said that "the man who is the referee to whom the Delphic oracle gave sent [daemon]..." must be more exact than the compass (tessera), the carpenter's rule (measures) and the gnomon. For if he adds one word, there is no hope to undo the evil, and if he subtracts one how would he not be guilty before the gods? The gnomon Theophrastus refers to is a set square, a carpenter's tool like the compass and ruler, and the context in which it is evoked makes it, like the other tools, an emblem of the exactitude required in proper interpretation of signs emitted from a divine source.

The case of the gnomon of a sundial is comparable. The construction of a sundial depended on knowledge of the movements of the heavenly bodies, which Anaximander revealed when he arranged them in the construction of his celestial globe. Knowledge of equinoxes and solstices enabled the fixed reference needed to give journeying men the earth, gnomon, an image in a map. Anaximander's earth was a disk, and its form did not reflect the spherical form established by heavenly heavens. How then, in archaic formulizations, could the spherical heavens and spherical earths so utterly differ in configuration, write to each other? The line that allowed for a reciprocal relationship between heaven and earth was necessary or reason was established, as I read Anaximander Br. 4.9.10 and Xenophaneo, according to the order of sequential time. In the part of Anaximander's cosmic model, the link between...
heaven and flat earth is the mediating gnōmōn that obstructs the sun's light in order to throw a shadow which moved over a paved piece of earth in a graphic projection of celestial movement. The pavement, or analemma, was marked with equinocials, solstices, and hour indicators, whose positions in reference points the gnōmōn, a human artifact set up at right angles to the earth, had also determined. There may have been dance, lived time, before the gnōmōn, but before the gnōmōn there was no recognition or proper reading of celestial signs, and time, because it was not yet interpreted, had as yet no image: was not known in the sense of eidos, to have seen. It was this human artifact, a concrete reflection both of human posture and of chronos as the rectilinear movement of time in the human life span, that revealed the heavenly kubernetes as cyclical and temporal. It was because of the gnōmōn, the mediating upright, that Plato was able to assert in the Timaeus, nearly 200 years after the gnōmōn's introduction to Greece, that "Time (chronos) came into existence along with the Heaven (ouranos)," and that God created the sun, the moon, and the planets "for the determining and preserving of the numbers of Time." Until the advent of the gnōmōn there could be no image, no eidos, of those numbers.