Pre-Socratic Philosophy
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From their precursors

- As we have seen, the Pre-Socratics appeared against a backdrop of anthropomorphic supernaturalism.
    - Hesiod's *Theogony* provides an expression of this worldview.
- This is not to say that such a worldview is either nonsensical or useless; nor is it without similarity in its general form to the thought of the Pre-Socratics.
    - There are conceptual affinities giving Hesiod's account some logical sense.
    - Even if technically ineffectual, a pervasive anthropomorphism results in a familiarized and therefore less frightening world experience.
    - And although anthropomorphic and therefore almost certainly false, some explanation is offered for the origin, nature, and behavior of the world.
        - Recall, for example, the early appearance of *Eros* as a proto-philosophical principle of change.

A new genius

- It is striking that little precedes the Pre-Socratics that anticipates their revolution.
    - Although the early Greek world was far from isolated geographically, there is little evidence to suggest that nearby cultures could have provided the primary impetus away from Hesiod's worldview.
    - The Babylonians brought astronomy to the Greeks.
    - The Egyptians had developed mathematics and commerce.
    - But nowhere else do we see the thorough-going naturalism and rationalism that evolves in Greece.
- Several sources of the development of philosophy may be identified.
    - First, there is the competitive nature of the Greeks, evident in their many *agonies*, competitions in art, song, dance, theater, and physical prowess. The dialectical method may be construed as a competition in which truth is the prize. This method is further developed by the Sophists and is evident in the emerging Greek democracy, wherein competition for the ear of the public as for the name of truth, if not the fact, become preeminent.
    - Second, the development of phonetic language, its increasing use and significance in Greek society, makes possible an increasingly sophisticated and truth-oriented written tradition. Where the oral tradition has its focus on an immediate interaction with its audience, the written word makes possible exchange with persons geographically and temporally distant. The written word makes possible comparison of *logoi* across times and communities. It enables the greater exertion of an ideological influence as authors, like poets, vie for attention. Perhaps it is in this environment that the speculation on truth turned increasingly

naturalistic and rationalistic as thinkers ever sought ascendancy. Note in particular the potential role of logic and empirical evidence in such a transition: contradiction and arbitrariness provide continual checks on theories (from *theoria*, presented before an audience) and the empirical likeness of oil to water, for instance, may provide ground for their claimed *logical* unity. That is, philosophy results from a linguistic tradition shaped by the increasingly acute appeal to sense and reason, which increase is facilitated by the written word.

Elements of First Philosophy

- As we have seen, all creatures bring some form of order to the universe. Humans bring rational order, order provided by rational *logoi*. The Pre-Socratics represent a major advance in the rationality of the cosmology. Key concepts in their cosmology are as follow:
    - *Phusis:* The term '*phusis*' gives us "physics" and related terms. It derives from a word meaning "to grow" and typifies the *natural* as opposed to the *artificial*. The distinction between natural and artificial is as follows: the nature of the natural is internal to it; the nature of an artificial object is imposed from without. That is, *ta phusika* (things physical/natural) have an internal principle defining their essence and behavior. This principle or *arche* is a *logos* capable of knowledge by humans. Note that with the designation of the "physical" as self-contained and self-driven, we see the origin of the concept of *nature* that we employ today.
    - *Arche:* principle. As above, the Pre-Socratics were convinced that the natural world was governed by a set of principles whose knowledge gave humans insight into the essential nature and workings of the universe. To conceive of the world as "principled" or "principle-driven" is to conceive it as highly systematic, orderly, and (in principle) knowable.
    - *Logos:* "word", account, concept. As we have seen, this is a term fundamental to human knowledge. For the Pre-Socratics, it emphasizes their conviction that all reality is characterizable in terms of words or concepts that humans can understand. That is, if *logoi*, in the form of natural principles, are *intrinsic* to the natural order; and if *logoi* are concepts and thus in principle intelligible to humans; then the whole of reality is in principle intelligible to humans. It remains only for us to discover the *logoi* in which the universe is written.
    - Thus, integrating and expanding on the above, we see emerging this notion of *cosmos:*
        - The universe is wholly ordered.
        - The universe is completely intelligible to humans, at least in principle.
        - The origin and development of the universe was an ordered process, not an arbitrary series of events.
        - The origin, development, and behavior of the universe proceeds according to naturalistic principles, not supernatural, anthropomorphic ones.

        - The principles ordering the universe are *internal* to it, rather than imposed from without.
        - The principles of universal order are *systematic:* a single system of principles governs all phenomena.
        - The principles of universal order are *simple:* a small set of principles governs all phenomena.
        - The universe for the Pre-Socratics was a quintessential *cosmos:* beautiful, elegant, harmonious,[1] wholly ordered and rational being.
- Logical method:
    - Since the Pre-Socratics were convinced that the universe was governed by *rational logoi*, their method of discovery and advancement was "logical" – i.e., their *method* reflected their *medium*.
    - Thus, *argumentation* and *logic* were of primary value in discovering the *archia* of the universe.
    - More generally, because the nature of the universe was in principle knowable by humans, the Pre-Socratics should in general expect or anticipate *evidence* for the truth of their views. Evidence is possible, for humans, where information derived via sense or reason is to be had. This means that either some form of "scientific" observation should, in principle, possibly verify an account, or some rational argument.
    - In other words, the Pre-Socratic method was *non-dogmatic*, and rational.
- Rationalism:
    - We can, then, characterize the original development of philosophy as an expression of an emerging *rationalism* in human culture. This is a broad and important principle of human thought, which we may define as follows:
    - Rationalism is the view according to which the world around us is understandable in terms of human words (*logoi* – concepts, ideas), where (a) the extent to which the world is *logical*, i.e., to which our words are capable of expressing the nature of all things and events tends to the *maximal* (contrast the *arbitrary* or *illogical*, where no *logos* can be put to a given state or event); (b) the more general principles governing particular phenomena are relatively few in number (i.e., an *economical* or relatively *simple* set of basic principles); (c) the relationships between the basic principles are themselves relatively clear or definable (i.e., the set of basic principles is relatively *systematic*); (d) these "words" or principles – the truths of the universe generally – are at least in principle *knowable* by application of human sense and/or reason; and (e) rationalism is typically a *critical* method, wherein assumptions are challenged and should be otherwise justified. Note that the supposition of logic and systematicity encourages the pursuit of truth by the critical examination of prior truths.
- Naturalism:
    - In addition, we can characterize an important trend in early philosophical thought as *naturalistic*.

[1] The term 'harmony' derives from *harmos*, the Greek term for a builder's joint akin to the modern builder's triangle.

- Naturalism is the view that the principles (*archia*) defining the material world around us and governing its behavior are *intrinsic* (or internal) to that order. It is not, perhaps, clear exactly what this means to say. But we can effectively contrast this view with the *supernaturalism* of Hesiod. On that view, the governing *logoi* of our world originate in and reside in another realm – namely, the divine realm of the gods. As we have seen, this view represents a considerable obstacle to the human access to and understanding of the intimate workings of our world. Naturalism, on the other hand, implies that the governing principles of this world derive not from beyond it, but may be found within it. This, of course, makes more feasible the project of investigating this world's order.
- In addition, we find the origin and development of idealism in the Pre-Socratic period. Idealism is the view that the nature or essence of reality is *ideal*, where this means (frequently) both "idea-like" and "perfect" or "perfectly good." Ideas are typically represented as non-material things that may or may not exist in space and time. Numbers provide a good example of something often thought to be ideal in this sense. And numbers, too, may be thought to be ideal in the sense of best or perfect. Whatever the number four is, it isn't just an approximation of "four-ness", not just a part or portion of the concept of numbering four. Rather, the number four is, in this sense, the perfect realization of the idea of numbering four. Pythagoras and the Pythagoreans may be characterized as idealists, as may Heraclitus.
- Note that while naturalism is an important development in Pre-Socratic philosophy, there remain in Pre-Socratic thought elements of supernaturalism: thus the various characterizations of our world as divine or god-like.
- Note, too, that while naturalism implies that the governing *archia* of the universe may be discovered in it, these principles may be less than obvious, to the uneducated eye. Further, in some cases, there is some question as to the extent to which this world is knowable by us, for the Pre-Socratics. Xenophanes, for example, appears to assert an ultimate truth beyond human understanding (21B34; §13, pp. 27-8[2]). See further, below.

- Departure from the past
  - While the Pre-Socratics as a whole represent a striking contrast to the religious cosmology of the poets, this is not to say that the two groups did not share any views. As we have seen, Hesiod's cosmology has its rationalist elements, in particular the various logical relationships among the deities. And the Pre-Socratic philosophers were neither atheistic nor were they in every respect both rationalist and naturalist.
  - Note, that the Pre-Socratics present *theological* accounts, naturalistic though these accounts tend to be. On Aristotle's account, Thales "thought

[2] Section and page numbers are to Cohen et al, *Readings in Ancient Greek Philosophy*, 4[e], Hackett Publishing Co., 2011. In most cases, I cite a D-K number followed by a section number. Section numbers will correspond to the section of Cohen et al devoted to the philosopher under discussion.

all things are full of gods." (11A22; §7) Anaximander's *apeiron* principle is "divine", "deathless and indestructible." (12A15; §11) Note, too, that human access to the truth is limited, on some accounts. Philolaus contrasts divine with human knowledge (44B6; §6), as does Heraclitus (22B78; §42).

  - What have changed are the anthropological and supernaturalistic features of cosmology. The divine is no longer represented in human form: it is water, or the *apeiron*, or *aer*, or number, or the logical unity of opposites. Similarly, where these principles are *archia* and thus *logoi* and, in particular, *phusoi*, they are to be located *in* the physical world around us, not outside it in some alien realm. "God is day and night, winter and summer, war and peace, satiety and hunger," for Heraclitus (22B67; §81). God is increasingly *single* and *intellectual*, as well as *infinite*, *inexhaustible*, *eternal* – a totality implying maximal universal logic. The gods of Hesiod, by contrast, are limited by their anthropomorphism; Heraclitus writes that Homer should be "flogged" for his accounts of the divine and their human weaknesses (22B42, §5; cf. Xenophanes, 21B11, §6).
  - A further difference is the development of a *prose* presentation of their accounts. Where the poets may include playfulness and the imaginative in their accounts of the gods, the Pre-Socratics invent the non-poetic prose style which involves the presentation of the theories and thoughts of a single individual for the benefit of a reading public. We see, then, associated with this trend an increased individualism in ancient Greek society as well as the increasing economic prosperity enabling leisure and wealth for literacy.
  - Note, however, that we do not see at the same time an end or even significant change to the religious practices of the ancient Greeks. These practices continue. The Pre-Socratics did not, in general, produce cult followings; the cult of Pythagoras is a notable exception. However, while religious practice continued, theology increasingly became the province of *theologians*, not the poets, and so became increasingly theories answerable to the logical standards being developed by the Pre-Socratics. It is further notable that with the general loss of the anthropomorphic deity, god becomes impersonal, so that his/her/its interest in our affairs and welfare cannot be taken for granted.[3]

- In sum – The Pre-Socratics were (largely) naturalistic and rationalistic in their philosophy.
  - Their naturalism is expressed in their belief that the universe expresses a *phusis* – it is a physical system obeying internal *archia* or principles.
  - Their rationalism is expressed in their belief that the universe is wholly a *cosmos* informed by *logoi* capable of human understanding, so that it is to be investigated by *rational* or *logical inquiry* (argumentation) and sense observation.

[3] Following Walter Burkert, *Greek Religion*, Blackwell Publishing, 1985, here.

- They represent an extension but radical modification of the cosmogonic and cosmological myths of their poetic antecedents.

The Milesians

- The Milesians exemplify the Pre-Socratic philosophy, and were its originators.
- *Material Monism:* Thales, Anaximander, and Anaximenes all maintain that a single, material *arche* explains the nature of the universe. For Thales, this principle is *water*. For Anaximander, an ultimately indeterminate *apeiron* produces a substance which itself produces the opposites of hot and cold. For Anaximenes, it is *aer*, an ethereal substance like a dense mist.
- Note, here, the complexity of the Greek concept *arche*, which we translate 'principle'. To speak of water as an *arche* is to speak of both the substance, water, and also that which makes a substance *be* water, which we might call the essence of water. Water, in other words, is water because it manifests the water-essence. Moreover, the latter doubles as an intellectual entity: it is by reference to the idea of water, which captures water-essence, that we can understand what water is. This coincidence of an intellectual principle with a material essence is especially pronounced in Plato's thought. Note, in any case, that this duality is a feature of *logoi* generally: where a *word* (or idea or concept) expresses the nature of something other than a word (e.g., a stone, star, or flower), we have two kinds of thing (one conceptual, one material). Just exactly how the one (conceptual) expresses the nature of the other (material) is an on-going and deep issue in epistemology.
- A further complexity built into these "principles" of physical being is their dual role as *seminal* as well as *dynamical* and *physical* principles. A physical principle we may define as expressing the nature of a physical being. A dynamical principle would determine how such a being might change, in certain circumstances. And a seminal principle would explain the origin of a thing having that nature. (Perhaps 'express' is a better term, here, insofar as a water principle doesn't obviously tell us how any such thing might come into existence. Compare, here, the Medieval Scholastic view according to which God carries the principle of his own being: the idea of such a thing is intended to include an account of why it exists.)
- Our three Milesians evidently knew and studied under each other. Anaximenes was a pupil of Thales, and Anaximander was a pupil of Anaximenes.
- Moreover, each successor appears to respond to problems in his predecessor in developing his own view. (As below.)

Thales

- The principle of material being is *water*. (11A12; §5)
- Observational evidence (as suggested by Aristotle): water nourishes life; certain hot things derive from water (compost, bodily warmth?); seeds contain water; nearly all things appear to contain some water (even stones may release oils when ground or compressed). (*ibid*.)
- Explanatory power: why the earth is at rest (because (a) it can float and (b) it "rests upon" water). By comparison, the earth could not rest upon air (it would

fall through it). (11A14; §6) (Note the ambiguity of 'rests upon'. Does this literally mean sitting on top of water? Or does it refer to a more abstract relation of ontological dependence? The comparison with air suggests the former; but, as Aristotle's objection suggests, that interpretation faces the problem of what water rests on.)

- One passage suggests that Thales is a panpsychist. He appears to have argued that souls produce motion, giving the example of a magnet. (11A22; §7) Note here the connection to the ambiguity (i.e., dual status) of the logical as both concept and material principle.

Anaximander

- The principle of material being is something indefinite (*apeiron*) – i.e., it lacks a determinate nature, but can produce determinate-natured things. This stuff either includes an internal principle of motion (change) or else in any case is in motion (changing), which results in its taking determinate forms, the hot and the cold. Both the hot and the cold are also moist.
- Critical merits: This theory is intended, evidently, as superior to that of Thales. Thales' account leaves unexplained how a determinate, basic stuff (water) can take on a different form, such as the dry (i.e., earth, stones, etc.). Anaximander's theory resolves this difficulty by having a single principle express itself in *opposite* forms (hot, cold) both of which are moist; the heat from the hot drives moisture from the cold, yielding the dry. Note, additionally, the conceptual unity of opposing forms, lending systematicity to the account.
- Anaximander's argument for the stability of the earth exemplifies the emerging importance of argumentation. In 12A26 (§17), he appears argue as follows: (1) There is no principled difference between upwards and downwards motion, or between motion to the left or to the right. Hence, (2) any overall (earth) motion in one of these directions would be arbitrary (i.e., without principled explanation). Further, (3) if there were reason (logic) for motion in one of these directions, then by (1) there would be reason for motion in the opposite direction, which is impossible. Hence, (4) there can be no overall motion in the earth – i.e., the earth is stationary.
- Note, too, Anaximander's attempts to account for the relative sizes of heavenly bodies, for celestial motions and eclipses, and a mechanism for human evolution.
- Anaximander is also noteworthy for reputedly creating the first map of the entire world, as well as a map of the universe. See the course webpage for images.

Anaximenes

- The principle of material being is "*aer*", a dense mist. This substance is indefinite insofar as it can yield different stuffs such as the hot and the cold.
- Critical merits: Anaximander leaves unexplained how an indeterminate stuff could give way to determinate stuffs: the inclusion of an internal principle of change seems *ad hoc*; and otherwise the principle of change must be external to Anaximander's indefinite stuff. Anaximenes improves upon this difficulty by providing mechanisms for the production from his dense mist of the hot and the

cold: the cold is a result of increased condensation; the hot is the result of rarefaction.
- Presumably, Anaximenes' *aer* is also in perpetual motion (though it is not clear that this is an improvement on Anaximander).
- Note the explanation for the stability of earth: it rides on a compression of air, being broad and flat; similarly for the other heavenly bodies. (Compare a paper falling through air.)

Pythagoras and Philolaus

- Pythagoras founded an important movement based upon mathematics, which evolved into separate, prominent movements. One of these, the *akousmatikoi* (from *akousmata*, sayings), focused on rules for practical life; the other, the *mathematikoi* (from *mathema*, study), developed theoretical accounts of metaphysics, mathematics, music, and astronomy.
- Pythagoras is known for founding this movement, and for maintaining doctrines such as the transmigration of souls (21B7, §1; 22B4, §4; 14.1, §7; 14.8a, §8; 14.8, §10) and eternal recurrence (14.8a, §8). Little else is known of his exact views.
- Aristotle attributes to Pythagoreans generally these views:
    - That number is the essence of all being; (58B4, §17)
    - That the One comprises the odd and the even; (58B5, §18)
    - That the unlimited (the odd) and the One are the ultimate subjects of predication, and thus the substance of being. (58B28, §19)
- The Pythagoreans generally conceived number as providing the harmony of the cosmos. (Sextus Empiricus; §16)
- Philolaus
    - Philolaus was a Pythagorean who was born after the death of Pythagoras. His writing constitutes an important resource on the Pythagoreans.
    - We see Philolaus argue obscurely concerning "limiters" and "unlimiteds". These are evidently the even and the odd, respectively, and Philolaus appears to argue that the cosmos necessarily consists of both combined in some form of harmony. (44B1, 44B2, 44B6)
    - Philolaus also asserts that numerical ratios are responsible for musical harmony (44B6a) and for the intelligibility of reality generally: nothing can be thought that lacks number (44B4)
    - The presence of number in things is said by Philolaus to reveal or signify itself to us, which we may take as an explicit assertion of the epistemological role of number: it is both fundamental to all things and open to human understanding. (44B5)

Xenophanes

- The fragments attributed to Xenophanes are notable for their rejection of the traditional pantheon of Olympic gods in favor of a single, unchanging and unlimited deity.
    - See, e.g., §2/21B1.21-24, §3/21B11, and §7/21A12.
    - And see §§4-6/21B14, 16, 15: Xenophanes poses an argument against anthropomorphism in the gods. Since it is ridiculous to suppose that there

are gods in the shape of horses and oxen, and since horses and oxen would suppose there to exist such deities just as humans suppose their deities to resemble them, it is similarly ridiculous (and impious) to attribute human features to God.
    - Thus, see §8/21B23, asserting the unity of God and rejecting his similarity to us.
- Also interesting in Xenophanes is the question of the knowability of God and the universe generally. He appears to assert that the ultimate nature of things is beyond our knowledge, where this pertains both to God himself and to the rest of the world around us. But he suggests that we can come to some approximate understanding of things, if by dint of effort. See §§12-14/21B18, 23, 24.
- Otherwise we find in Xenophanes a *phusikos*, offering naturalized explanations for empirical phenomena, such as clouds, the shining of the stars, the wind, and fossils.

Heraclitus

Reality, change, opposition, and unity

- For Heraclitus, change is the *arche* of being: to be is to change, and to change is to be. Paradoxically, the only reality that does not change is change itself. I.e., if change were to change, it would become stasis; evidently, stasis is impossible (indeed, it is difficult to imagine; see Shoemaker, "Time without Change"). (This is not obviously a true paradox, but the application of a concept at different levels.)
    - See 22B84a (§55): "Changing, it rests." I.e., there is stability (of being, of being kind *K*) in change (of a certain kind). [Being a sheep, for example, involves undergoing certain kinds of change – i.e., biological processes. As soon as these changes halt, the being of the sheep ceases – i.e., the sheep dies. So, stability in the form of being a sheep consists in the continual change constituting its life. I.e., stability, being, reality, consists in continual change.]
- Change inherently involves opposition, and in a number of forms.
    - Change itself involves two forms: change in properties (alteration), change in constitution.
    - Change in properties is perhaps the simplest form, involving transition from *x*'s being *P* to its being *not-P* (or vice versa). E.g., the cold stove becomes hot (= not cold); the hot stove becomes cold (= not hot). (§80/22B126; cf. §52/22B36)
    - Other forms of change involve the *constitution* of a thing: the water making up a river is continually changing, as is the material making up a flame. (§39/22B12; §45/22B30) The opposition in such cases is that among constituents: now one set or quantity constitutes the object; then another. In this connection, see the paradox of the Ship of Theseus.
    - Fire seems a special case, here involving *consumption* (destruction) of one thing to create another (§51/22B76a).
    - We also find apparent opposition in these forms:
        - ♣ *x* is *P* and *not-P*. (§68/22B60: the road up is the road down.)

        - ♣ *x* is *P* to *a* and *not-P* to *b*. (§69/22B61, §70/22B82, §71/22B13, §72/22B9, §73/22B4, §74/22B37, §76/22B83, §85/22B58, §67/22B59)
            - Absolutely: sea water is good for fishes, bad for humans.
            - Relatively: a human is wise (and beautiful) with respect to an ape, but an ape in comparison with a god.
        - ♣ *P* = *not-P*. (§79/22B103, §66/22B48, §7/22B57) I.e., a particular state or condition or object is identical with its opposite (in some respect or with respect to different things). E.g., the beginning and end point on the circumference of a circle (B79).
        - ♣ *P* if and only if *not-P*. (§83/22B23, §84/22B111) I.e., a particular state or condition or object is possible (or conceivable) only insofar as its opposite is also possible (or conceivable). E.g., justice is conceivable only where injustice also exists (or is possible). Cf. disease/health, hunger/satiety, weariness/rest, war/peace.
- Unity of opposites: Heraclitus seems to suggest that change (or reality or truth) involves the unity or unification of opposites. There is a conceptual point, here, as well as a metaphysical one.
    - Conceptually, a thing and its "opposite" constitute a *plenum*: all reality divides into the classes *fish* and *non-fish*, for example. See §81/22B67: "God is day and night, winter and summer, war and peace…" These combinations of opposites serve to parse the whole of reality ("God") several times over. And §60/22B10: "Things taken together are whole and not whole…"
    - Further, in conceptual terms, we can understand a thing only if we can also understand its opposite: justice is knowable only insofar as we recognize injustice. (§83/22B23) I.e., the *P*, *not-P* opposition constitutes the unity that is understanding of the given concept.
    - In metaphysical terms (i.e., concerning the structure of reality, as opposed to how we think about it) a given change (or being) is a single change (or being) only insofar as some opposition is or has been achieved.
        - ♣ Diachronically: at one time, *x* is *P*; at another, it is *not-P*. E.g., completion of change from hot to cold.
        - ♣ Synchronically: *x* is *P* and *not-P* at the same one time. E.g., the bow, which exists as such only when one force (from the bent wood) is counterbalanced by another, opposed force (from the tension of the string). Here, existence involves a tension between opposites. (See §66/22B48, §61/22B51.) Cf. the tension in the fire, whose fuel must be replenished even as it is exhausted.
- Paradox? Although much of what Heraclitus says sounds paradoxical, there appears to be sensible content to much of what he says.
    - An actual paradox would result in confusion or nonsense, insofar as a paradox entails contradiction.
        - ♣ E.g., fragment §68/22B60: but even here, the opposed up/down motions are in respect of travel in different directions. It makes no sense to say, 'The car went up at the same time, in the same

respect, as it went down.' But here Heraclitus needn't be interpreted as saying *that*. Rather, the point seems to be another conceptual one: *up* is intelligible only insofar as there is a *down*, and vice versa.

- This is generally the case, with Heraclitus: that opposites exist not in the same respect, but in differing respects, or in different things, or at different times.
- However, this is not to deny the general claims concerning unity of opposites, in both conceptual and metaphysical form.

Flux: How much change?

- A Doctrine of Flux asserts that all things exist in a state of continual change.
- Extreme Fluxism: everything changes in every respect at every moment.
- Moderate Fluxism: everything changes in some respect at every moment.
- There is some question concerning whether Heraclitus was a moderate or an extreme fluxist. Plato seems to read him (or his followers) as an extreme fluxist, in at least one place (see *Theaetetus*). However, a charitable reading of Heraclitus allows the more moderate position.
  - Certainly fragment §55/22B84a is most naturally read this way: "Changing, it rests."
  - And the famous river fragments (§§39, 40/B12, B91a, b) makes sense only supposing that the river does not change its identity, but only its constitution, from moment to moment.

Parmenides

Parmenides and Philosophy

- Parmenides represents a watershed in the history of Western philosophy.
- The level of logical sophistication in his writing is greater than (or, anyhow, represents a culmination of) anything preceding it. The questions he raises concerning the logic of negation continue to inspire work at the most advanced levels of contemporary thought. (See e.g., Gottlob Frege, W.V.O. Quine, and Colin McGinn for recent discussion. For further general discussion of Parminides' thought, see http://plato.stanford.edu/entries/parmenides/.)
- The basic problem concerns how to think about falsehood and non-being. Non-beings (non-entities) do not exist, of course, so how does language describe or refer to "them", if at all? How is it possible for us to think about these "things"? How are we to talk of unicorns, for example, if there exist none? Likewise, falsehood concerns that which is not, and that which is not does not exist. It's false that McCain won the 2010 Presidential election, which raises the question, for Parmenides, of how we are to talk or think of that non-event.
- Presumably, there is a difference between falsehood and nonsense, but logicians have struggled to characterize successfully the difference. There exists a well-received predicate logic owing to Bertrand Russell, Quine, and Frege; but controversy remains as to whether this account is correct. (See Quine, "On What There Is" and McGinn, *Logical Properties*.)
- Ordinary language and thought do distinguish between falsehood and nonsense; but this is precisely the talk and thought of "mortals" that Parmenides calls into question.
- Note, too, that whereas his predecessors sought to *explain* the apparent nature of the world as involving change, fundamentally, Parmenides is the first Western philosopher to reject wholesale the basic appearance of reality in favor of a theoretic reality. (See e.g., 4, lns. 1-2, §7, ln. 5. Plato will advance a similar account, though he will retain some sense of a real order of change.)

The One

- According to Parmenides, there is only one thing, the One. The One is eternal and unchanging, it contains no diversity but is entirely and continuously homogeneous. It is a plenum, a complete reality such that nothing could be added to it. And it is a single thing, as opposed to a plurality. Further, the One could not fail to exist – it is not possible for it not to exist – nor is it possible for any real state to be different. And nothing other than the One could exist: everything that is possible is actual; nothing that it not actual is possible.
- The One is the "way of truth" – i.e., in order to speak or think truly, one must speak or think of the One. Paradoxically, there is no alternative.
- In particular, "the Other" is the "way of error." Not only does the Other not exist, but it is an error to think that we can speak or think of it. This makes a certain sense, of course: if the "One" is all there is, any assertion about anything else will necessarily be false (except for the assertion that this "Other" doesn't exist; but that will be paradoxical, too).

- See §§2, 3, 6, 7, and 8 for the heart of this view.
- Why would anyone hold such a view? What is Parmenides thinking?

What can and cannot be thought

- The correct account of Parminedes' thought remains a subject of ongoing debate. Here is my (present) understanding:
- At §2 lines 6-8 (2.6-8), at §3, and at §8.34-5, Parmenides suggests that we can think only of something real, and never of something that is not real. What does this mean, exactly, and why does Parmenides say it?
    - For one thing, to think of "that which is not" (say, a unicorn) is for one's thought to "fail to refer". By contrast, to think of "that which is" (say, a donkey) is for one's thought successfully to refer. In the false case, there is no actual "target" for one's thought; in the true case, there is.
    - It is natural to object: but isn't it *true* that there are no unicorns? The answer is, yes – but, now, what *makes it true* that there are none? There aren't any unicorns about which to say that they don't exist. What, then, is the statement 'there are no unicorns' about?
    - In the case of donkeys, we can say that the statement 'there are donkeys' is true because there exist donkeys. I.e., it is the existence of the donkeys themselves that makes the statement true.
    - Perhaps, then, we should say that 'there are no unicorns' is made true by the unicorn-less world. This, however, tends to confirm Parmenides' point – we can only talk about "that which is", and only "that which is" makes any given statement true.
- Non-actual possibility: a non-actual possibility is a possible event or state or object that doesn't actually obtain in the real world. For example, it seems possible that I had a younger sister, but in fact I have none. Parmenides thinks that talk of non-actual possibility is like talk of non-entities. If the "possibility" isn't actual, then that is to say that it does not exist at all. Philosophers have struggled to define non-actual possibility.
- Let us grant, for the moment, that Parmenides is right to say that we can only think of "that which is" and never "that which is not." This will allow us to develop his full view. Later, we will return to this point.
- The key point, as far as his argument for The One is concerned, is the prohibition on talk or thought of "what is not." If we cannot, in fact, think or talk of that which is not, then, it would seem, such talk has no meaning. To say that it has no meaning is to say that there are no states or possibilities other than those that are. All that exists is The One, and that is all that can possibly exist.

Without the unthinkable

- As above, Parmenides maintains that the world is unchanging, homogeneous, complete, single, and necessarily so. These specific prohibitions follow from his general restriction on what can be thought.
- Change: There can be no change, because change involves that which is not.

    - I.e., in generation, we have change from nothing to something. But that "nothing" is unthinkable, and so not possible. Similarly for destruction, which involves a change from something to nothing. See §8.3-10, 8.27.
    - In alteration, we have change from having a property to lacking it (or vice versa), or from standing in a relation to not standing in a relation (or vice versa). But not having a property or relation is in itself not a real thing, unthinkable, hence impossible. This applies to changes in color, e.g. (8.40) and to motion (8.40) and increase or decrease (8.23).
    - Parmenides also argues that the state prior to generation, a state in which the being in question does not exist, is thus a state of non-being – i.e., a state from which no being could evolve. This is a prohibition on *ex nihilo* becoming. No being can emerge from nothingness. See §8.7-10.
- Qualitative Diversity: There can be no qualitative diversity (one thing having one property, another having another), because diversity involves that which is not.
    - See 8.4, 8.22-24, 8.46.
    - E.g., if one region of space or time were blue and another white, then some would be not-blue and some not-white. But there is no such thing as being not-blue or not-white. So there can be no diversity.
- Numerical Diversity: There can be no numerical diversity (the existence of more than one thing). For if there were two things or more, then there would be one thing that was not another, which again involves talk of that which is not.
- Parmenides seems also to suggest that where there is no change or diversity, there is also no passage of time (§8.5, 18). This is evidently a consequence of there being no possibility of distinguishing one moment from another, given the homogeneity entailed by the lack of change and diversity.
- Plenum: The One is "full" in the sense that nothing can be added to it. For if something could be added to it, then it would lack something. But no lack is real. See 8.32-33.
- Monism: I.e., the One is one single entity, and does not contain a plurality of distinct entities. For if one entity within the One were distinct from another (i.e., not the same one thing), then again we would have a non-being – namely, one thing not being the same one thing as another. See 8.10.
- Necessity: in §2, Parmenides observes that that which is not cannot be. That is, there can be no non-actual possibility, for the non-actual does not exist. Since the non-actual does not exist, the putative statement asserting a non-actual possibility in fact refers to nothing and fails to assert a possibility.

Evaluating Parmenides

- As above, it is not clear that Parmenides is wrong, but one understanding of logic and language suggests that he is.
- For one thing, Parmenides may be guilty of a logical error in his claim that the non-actual cannot exist.
    - This statement is *ambiguous* as between the following:
        - ♣ Necessarily, that which is non-actual does not exist.
        - ♣ That which is non-actual necessarily does not exist.

    - These two statements have very different meanings. The first states an evident commonplace: a non-existent thing does not exist. E.g., it is a necessary truth that my non-existent little sister is non-existent. (Compare this: necessarily, a blue thing is blue.) The second asserts a more controversial thesis: there can be no non-actual possibilities. E.g., my non-existence sister is necessarily non-existent – i.e., she couldn't have been real. (Compare: a blue thing is necessarily blue.)
- Further, contemporary predicate logic treats *existence* not as a property of things, but as the ground of truth and falsity.
    - If we treat existence as a property of things, we face awkward formulations such as this: the unicorn lacks the property of existence. Such a sentence seems to say that there is a thing, a unicorn, that doesn't exist. That sounds incoherent.
    - Alternatively, we may stipulate that the meanings of expressions such as 'unicorn' and 'donkey' serve to classify the objects of the world. Some classes have members, such as the class of donkeys; others lack members, such as the class of unicorns.
        - ♣ To say 'there is a donkey' is to say that somewhere in the world there exists an object satisfying the description by which the donkey class is specified.
        - ♣ To say 'there are no unicorns' is to say that every object in the world fails to satisfy the description by which the unicorn class is specified.
- However, the jury is still out on this matter. The logic described above involves abstract objects (classes, descriptions) and obscure relations (satisfaction) which are part of the terrain under dispute. Whether such talk is correct is controversial, and so the issues raised by Parmenides remain contentious. (*Modal* talk – that involving possibility – requires similarly controversial analysis, especially about the status of the non-actual.)
- We can say this, however, with confidence: the issues raised by Parmenides are vital to our understanding of logic. His work is not quaint, outmoded puzzling, but rather an important critique of the structure and possibility of human thought and understanding.

The Whole of the Poem

- It may surprise the student that Parmenides writes in verse, and more especially that he includes an invocation to a goddess as well as an elaborate, seemingly mythological cosmogony. Both are reminiscent of Hesiod's *Theogony* and a poetic tradition against which we have contrasted the thought of the Pre-Socratics. How should we understand these elements of Parmenides' work?
- Invocation
    - The invocation is distinctly reminiscent of Hesiod's ode to the Heraklion muses.
    - We are presented with a stirring account of the narrator's chariot ascent to the gates of heaven, where a goddess reveals to him the truths of the world. It is here that we first learn that there are two Truths, one

legitimate, the other false. What follows is conveyed by the narrator as the words of the goddess.
    - One might, then, wonder whether Parmenides hasn't undermined his own rationalist stance by appeal to a supernatural source of wisdom.
    - While much like Hesiod's ode, we also find significant differences in this invocation. The goddess speaks of the narrator "learning" all things, which leaves open the possibility that knowledge in this case is not revealed but natural – i.e., discerned by reason or sense, though, as we see, it is reason not sense, in this case, that perceives truth. Further, as the poem continues, we see Parmenides deliver arguments for his claims, which is in strict keeping with the critical tenet of rationalism.
    - Also notable in the invocation are the two images drawn at lns. 6-8 and 11-13 of the completeness of complementary relationships, first between the axle and wheels and second between the lintel and threshold and doors of the gate of heaven. Where Parmenides is intent upon demonstrating the logical completeness of his account, a conceptual wholeness or plenum, these images serve as preview of the order and integrity of that account.
- The Cosmogony
    - Beginning with §9, Parmenides relates an account of the origin of the universe which has challenged commentators' ability to interpret Parmenides' thought. Why, having argued against the reality of appearance, would Parmenides now assert a process of change that would seem utterly at odds with his central thesis? Does he intend an irony, a satire of the way of error?
    - The Cosmogony is interesting for its specific details. Supposing that this is an account of the cosmos under the way of error, we are told that all things on this view partake equally of a "light" and a "night" (§9). By this, the suggestion seems to be, we will know "the nature of the aether" (§10.1) and the galactic elements that "surged forth to come to be." (§11.3) Given the contrast developed by Parmenides between what is and what is not, it seems natural to suppose the light to imply what is and the dark to imply what is not. To the extent that the senses systematically misrepresent reality, they should be understood to inject something of the dark, the negative, nothingness, into whatever they perceive.
    - Does this undermine Parmenides' way of truth? Perhaps not. Falling as it does after presentation of his central view, we are invited to consider this account of the world with that view in mind. The cosmogony, notice, is essentially a naturalistic process. Gods are mentioned, but there is none of the anthropomorphism found in Hesiod. Rather, we are offered a relatively plausible account of the origins of the natural world in some natural cataclysm, one which produces first fire and space (§12.1-3) and then evolves into the familiar present state (11.3), later to expire (18.2).
    - What is it to consider this account under the aegis of the way of truth? Arguably, it is to remind ourselves that our erroneous way of understanding, for all of its accuracy and detail, involves drawing distinctions where in fact there lay none. It is we who distinguish one

thing from another by means of conceptual discrimination. This form of thought, however, is accidental to the truth. Our concepts are pragmatic, at bottom, drawing distinctions that matter to us, but which are ultimately arbitrary and conventional. It is worth noting that the same period in Ancient Greek history witnesses the development of individualism even as that process meets resistance – this opposition is the topic of Nietzsche's *The Birth of Tragedy*, in which he pits Apollo against Dionysus as the key, formative opposition in the Greek mind. Apollo is the god of illusion, the god of dreams, the god of visual art, the god of rational discrimination. Dionysus is the god of unity, of drunkenness, of self-forgetfulness, of music. Even as humans develop the means by which to distinguish themselves from their environment and from one another, we find the longing for a return to unity with nature and with each other. Parmenides may be seen here to invoke this development of rational illusion in the face of a monolithic, mute world of being.

Pluralism

From Parmenides:

- Monism: there is only one thing.
    - I.e., there is no plurality.
- There is no change.
    - No motion (change in location).
    - No alteration (change in quality).
    - No generation or destruction (change in ontological state).
    - No time (physical change per se).
    - Note in general that the prohibition on change is often made in terms of *ex nihilo* becoming. That is, any truly new state or condition, presumably, involves the creation of something that previously did not exist. Insofar as it did not previously exist, the new thing or state may be said to come into existence "from nothing", *ex nihilo*. The conceptual puzzle of such creation provides much of the motivation, evidently, for Parmenides' view.
- There is no diversity.
- There is no void (reality is a *plenum*).

Pluralists and Atomists

- Some philosophers succeeding Parmenides tried to reconcile his claims with the appearance of change and diversity. While they shared his rejection of generation and destruction, they rejected his monism in favor of a pluralism, accepted diversity to varying degrees, and they rejected the denial of motion. And while they depart from Parmenides' strict monism, Parmenides' influence remains strong; their innovations attempt to preserve his notion of being as complete and simple.
- Empedocles and Anaxagoras (the "pluralists") also shared Parmenides' rejection of a void, which distinguishes them from the atomists.
- Note, too, the response to Zeno, specifically. Where Zeno bases his arguments on these two claims:
    - Whatever has size has parts;
    - There is a smallest size part;

  two philosophers respond as follows:
    - Anaxagoras: there is no smallest size part (§1);
    - Democritus: not everything having size has parts (§11).

Empedocles (492-435 BCE): four elements ("roots") plus two forces

- Like Parmenides, Empedocles rejects any simple sensory access to metaphysical truth. (§28, §47.21)
- Empedocles accounts for apparent reality by means of the coalescence ("mixture") and separation of four basic kinds of thing: earth, air, fire, and water.
- The force bringing things together is "Love" and that forcing them apart is "Strife". It is not clear whether these are intended anthropomorphically. There is a single reference to panpsychism at §116.9. Otherwise, Empedocles' system

seems largely naturalistic. See also references to gods in §8, etc. On the other hand, it appears that Empedocles thinks of love and strife in the same terms as found in our experience: see §46 (where 'both of these' refers to Love and Strife), §47.19-20, 22-24, §48, and esp. §49. Thus, if not an anthropomorphism, we have an assertion of force qualities like those to which we are subject – i.e., the same kind of thing motivates us as moves inanimate objects.

- The motions of the four elements are varied over time, leading to the occasional "dominance" of one or another element (as in, e.g., times of drought or storm), and leading to the temporary existence of all physical and biological forms.
    - Different mixtures of the elements yield different stuffs, such as bone (§87) and blood and flesh (§88).
    - Various physical phenomena are explained by reference to the mixing properties of the elements, such as water's affinity for wine but aversion for oil (§56).
- This amounts to *Reductionism*: an apparent or surface reality is explained in terms of another.
    - See, e.g, §§39-41, where we see Empedocles describe the apparent life and death of living creatures. These are not, in face, cases of true generation and destruction. Rather, we have only a mixing and un-mixing of the basic elements, which mixtures we call living things (beasts, bushes, birds, men).
- Evidently, there are times when the four elements are united – though this is difficult to reconcile with the denial of generation and destruction. (§47.16f)
    - It may be that Empedocles has in mind a kind of Heraclitean balanced cycling: as love brings the elements together, strife grows in strength proportional to the love thus expended and the unity thus achieved. (See also §101, §102. There is also some suggestion here of an understanding of potential versus kinetic energy: the farther from the "center" moves strife, the greater its potential for return. Aristotle will make this dynamic central to his physics.)
    - Perhaps Empedocles means this giant, oscillating motion to be the prime mover of all lesser motions and changes.
    - The identities of the four elements, however, must presumably be retained during times of union; otherwise the prohibition on generation and destruction will be violated.
- Cosmogony: As above, Empedocles seems to envision elemental unification events which give rise to the proliferation of biological species. See fragments §§101, 103, 104, 106, where we see strange combinations of animal parts and a plethora of life forms produced.
- Empedocles also includes principles of a moral order (§§8-38). Good and evil, moral right and wrong, the value of life, and even the existence of the gods are characterized by Empedocles in the same terms of mixture of the roots in the vortex of love and strife. This incorporation of the moral into the physical and metaphysical will increase as we approach Plato.

Anaxagoras (500-428 BCE): myriad elements

- Anaxagoras, too, denies the capacity of sense to penetrate metaphysical truth. See §20, §21.
- For Anaxagoras, Empedocles' ontology is (much) too sparse. With only four elements, Empedocles must deny the reality of all apparent kinds other than these. Thus, blood, bone, hair, copper, tin, biological species, etc. are, in reality, only manifestations of earth, air, fire, and water. While Empedocles' account will seem familiar to us now (think of particle physics), there is nevertheless significant intellectual discomfort in rejecting the distinction between, say, oak and cherry.
- No emergent properties: an application of the prohibition on generation and destruction. If oak *were* sui generis, then asserting its origin in some combination of earth and water (say) would imply the creation of something (oakenness) from nothing (the absence of oakenness). Anaxagoras' solution is to maintain the reality of indefinitely many distinct kinds.
- In order himself to avoid *ex nihilo* becoming, Anaxagoras must assert that all things exist together in all places.
- Cosmogony: initially, all things are mixed uniformly; there are indefinitely many distinct things thus mixed; and initially this whole is indefinitely small. (§1)
    - Evidently, there is an important qualification: air and aether "dominate" at this time, being "largest in the totality, both in amount and in size."
    - It is not clear that this idea is coherent. One thought here seems to present air and aether (substantial space) as the infinitely large repository of the infinitely small nascent universe. But this would violate the uniform mixture hypothesis. And if the mixture is uniformly mixed, it is not clear in what sense air and aether can differ in respect of amount and size.
    - Perhaps Anaxagoras means that throughout the air/aether were distributed infinitely and homogeneously the rest of the elements.
    - In any case, in initial conditions, opposites have yet to emerge (wet and dry, hot and cold) nor is there light or color. See §4.
- A subsequent revolution event occurs, a spinning of very great speed, resulting in a great "separation". This separation results in the exaggeration of one or another quality, resulting in the appearance of diversity. (See §9, §11, §16)
    - It is difficult to reconcile the several aspects of Anaxagoras' belief.
    - At §6 and elsewhere he claims that one kind is not separate from its opposite (cf. Heraclitus); at §9 he denies that anything is separate from anything else. In what sense is Anaxagoras a pluralist?
    - Anaxagoras seems to want to preserve something of the Parmenidean homogeneity: all things are intermixed equally, so that, in fact, we have an overall perfect homogeneity, albeit one consisting in indefinitely many distinct kinds.
    - In places, however, one or another kind predominates – not to the exclusion of other kinds; but only insofar as the portions of those other kinds are smaller. Given that things can be indefinitely small, this is at least coherent.

    - Thus, while there appear to be regions of gold, bone, etc., these are in fact mixed with their opposites and with all other things in perfect and unchanging proportion.
- Note that Anaxagoras allows a further element, Mind, which is ubiquitous, admits of no opposite, and is the prime mover. See §12.
    - Mind, further, "rules all things," suggesting an equivalence (equivocation?) between mind and natural law. (Again we see a confusion of ontological principle with epistemic: the same thing has both ontological and noetic qualities.)

Atomism

Explaining (apparent) change

- The pluralists maintained that reality is, in one sense, unchanging, since that which is real – the elements – are themselves unchanging. However, there is a kind of change consisting in the varying mixing or "separation" of the elements.
    - For Empedocles, the change in mixture of the four elements explains (e.g.) the decomposition of flesh.
    - Anaxagoras' account is less clear.
        - ♣ The claim that "everything is everywhere" (§49) commits him to the view that a given element (e.g., flesh) is "larger" at certain times, but then is reduced to be replaced by an enlargement of rot (say). This view is attributed to him by Aristotle.
        - ♣ Simplicius, however, attributes to him a view resembling the "mixing" account of Anaxagoras; see Anaxagoras §17. If everything is everywhere, however, combination and separation cannot be interpreted literally.
        - ♣ In any case, change occurs by means of some motion in the elements – if not by "translocating" (moving from one place to another) then by swelling or shrinking?
- A question arises here how to conceive such motion or mixing.
    - (The point is more easily put in terms of Empedocles' view:)
    - Recall that Empedocles and Anaxagoras both deny existence of any void. Like Parmenides, they believe that reality is a *plenum*: there is no empty space, and no possible addition to what is.
    - This makes it difficult to conceive of motion, however. Ordinarily, we conceive of motion as involving translocation of a space-filling body into an empty space. But in the Pluralists' universe, there is no empty space for anything to move into.
    - Perhaps the elements are sufficiently flexible to permit shifts in their distribution. The Atomists, however, more readily account for motion by admitting the reality of the void.

The full and the empty

- For the atomists, there are two basic classes of being – the atoms, and the void.
- Atoms are single, simple, indivisible, unchanging, eternal things. (From *a-tomos* – un-splittable) They can be neither created nor destroyed. They may be likened to Parmenides' *One* – each like his one universe.
    - Atoms vary in shape and size, but do not have *weight* (what we call mass): their apparent weight is a consequence of their motion, which is on the whole *downwards* evidently (i.e., "falling").
    - The atoms are unlimited in number, and their shapes are infinitely varied; each is unique.
    - Atoms are also individually "compact" or *full* – i.e., each an individual *plenum* (a la Parmenides): nothing can be added to any atom. (Such an

addition would require empty space in the atom to fill. This feature evidently also makes them "atomic" – unsplittable)
    - Atoms exist in perpetual motion (though, as Aristotle complains, it is not clear how this motion originated).
    - Atoms join with others to create visible objects in all their variety. They do not combine to form further atoms, and, in fact, do not come into contact. But they nevertheless become "entangled", owing to their odd shapes.
        - ♣ The various flavors are a function of certain combinations of shape, e.g. §35.
- The void is that in which the atoms reside. It is distinctive for its existence, for its providing the atoms a place to exist, and for its permitting the motion of atoms. The void is unlimited in extent. (Compare the contemporary view of spacetime as substantial.)
- The atomists' view is again *reductive*: the appearances of objects are *illusory* and *unreal*. The only realities are those pertaining to the atoms' shape, size, motions, and combinations.
    - Only the *intellect* is capable of perceiving reality. (See §9, §45.)
    - On the other hand, it is not clear that we can know anything at all. For if ultimate reality is not directly available to the senses, it appears that we must remain ignorant of its exact disposition.
- The atomists were also *causal determinists*: every event occurs as a necessary consequence of its antecedents. (§1)
    - Note that a skeptical conclusion is drawn from this at §49: "knowledge" consists only in the deterministic "reshaping" of a person's mind on account of the motions of atoms.

Evaluating Atomism (one train of thought)

- On the whole, it seems odd to postulate a form of being whose consequence is our ignorance of reality. There can be no confirmation of such a theory.
- Nevertheless, the theory is powerful in explaining the variety of appearances in terms of a variety of insensible, ultimate, and unchanging things.
    - Compare Parmenides: all change is illusion, but he provides no account of the illusion; in this respect, his theory seems *arbitrary*.
    - Atomism, by contrast, provides an account of (the illusion of) change: change (such as it is) is a consequence of the motion of atoms; change is illusory insofar as all higher-order properties are illusory.
    - Is this an improvement over Parmenides? Parmenides has no account of the illusion of change; the atomists account for the illusion of change by reference to a *mechanism* which, however, is itself mysterious: why should the various motions of the atoms produce in us such erroneous experiences?
    - The pre-Socratics remain challenged to explain higher-order appearance without invoking *emergent properties*. They remain convinced, with Parmenides, that recognizing *whiteness*, say, as real at the visible level would be to allow *ex nihilo* becoming, if there is none at the atomic level.

- (This problem will lead Plato to reverse the “bottom-up” explanatory order. Reality, for him, begins with the broader, mind-level forms of being.)