**The Pre-Socratics**

**Here is the information, plus more, that I usually lecture upon. To save time and get us ready for Plato more quickly, please read the following. (There are some of my comments and a lot of expert commentary from solid internet sources like Stanford University’s Philosophy Department. Please eventually read my comments; they will help with the homework due on Thursday for instance. It’s up to you with regard to reading all the text in** black.**)**

**The three earliest Western Philosophers are named Thales, Anaximander, and Anaximenes. I am going to provide text from the sites I link on the class webpage in an effort to give you some details on these three and Pythagoras; then I will explain Heraclitus and Parmenides. On Monday I will take us quickly through. You can read this at your leisure. . (When you read any purple below, that is me making comments. Other authors’ text will be in black.) First off** **Thales**:

“In his account of his predecessors' searches for “causes and principles” of the natural world and natural phenomena, Aristotle says that **Thales of Miletus** (a city in Ionia, on the west coast of what is now Turkey) was the first to engage in such inquiry. He seems to have lived around the beginning of the 6th c. BCE. Aristotle mentions that some people, before Thales, placed great importance on water, but he credits Thales with declaring water to be the first cause (Metaphysics 983b27–33), and he then later raises the question of whether perhaps Hesiod was the first to look for a cause of motion and change (984b23ff.). These suggestions are rhetorical: Aristotle does not seriously imply that those he mentions are engaged in the same sort of inquiry as he thinks Thales was. Two other Greek thinkers from this very early period, Anaximander and Anaximenes, were also from Miletus, and although the ancient tradition that the three were related as master and pupil may not be correct, there are enough fundamental similarities in their views to justify treating them together.” (<https://plato.stanford.edu/entries/presocratics/#Mil>)

**All three think of the Milesian philosophers, Thales, Anaximander, and Anaximenes think that there is ONE underlying *thing*, Water, the Apeiron, and air respectively which explain what the world is made of. They want to reduce everything, the many, down to some one thing at the explanatory core. Because they reduce the many down to one, this makes them *Monists*. Monists are people who believe there is one thing at issue. Monotheists believe there is one God. Christians, Jews and Muslims are monotheists.**

**I am presenting six pre-Socratics, the three explained below, and then Pythagoras, Heraclitus, and Parmenides. As I said in class, I am presenting the first three, the Milesians, not for their specific ideas – although their ideas are interesting in and of themselves. I present them to show how a *Philosophical Conversation* operates. Thales concludes, somehow, that everything is made of water. (Thale’s idea is not stupid. Water appears as liquid, gas and as a solid. It takes on the shape of other objects, like a glass or cup, and all living things need water. Water falls from the sky above, and if you dig in the earth, we find water: bonus points for remembering that Thale’s home town is Miletus: a sea port town..)**

**Anaximander reasons that if everything is made of water, then why isn’t everything water again? Something must move the water into the forms we see; maybe it’s the energy or ruling laws. He introduces the *Apeiron* concept. The *Apeiron* is like a vortex off of which, as it spins, pairs of opposites, hot / cold, emerge. He can’t define the *Apeiron* as easily as Thales can point to water.**

**Anaximenes sees the answer to the question what is everything made of is the *Aperion* only adds confusion. Anaximander returns to using a single *stuff* to explain what things are made of and how they change. (How does a cow turn grass and water into milk? Everything, grass, water and the cow is made of one ultimate kind of *stuff* which is manipulated.) The manipulations are those of *Rarefaction* and *Condensation*. They either squeeze bits of air together densely enough to produce material objects like rocks, or the air expands to its zenith, the Sun. (It’s not a dumb idea right? In science we measure the wavelength at which light travels. If we know the wavelength, we know the color. Quality is often a function of quantity. More gas introduced to an internal combustion engine, the fast the engine runs. Basic science here: I believe Anaximenes deserves massive props.**

**Each new person who joins the conversation adds his own interpretation and answer to the questions: *what is the world made of, and how does it work?*
 Thales gives his answer. Anaximander questions that answer, and proposes his own solution. Anaximenes comes along and does the same. People have been doing this, questioning each other’s answers, ever since.
 This questioning, I aim to prove over the course of the semester, is what leads to science, technology, and our ability to understand how the world works with incredible precision. The invention [or discovery] of certain mathematical truths, and their accompanying system(s) like the Calculus, have allowed us to make use of these mathematical representations of the world and apply them when designing and engineering new objects like computers and rockets. (For example, in order to design such magnificent machines, we need the calculus and the way it lets us consider limits. They are possible because we learned from Copernicus, Galileo, Descartes, Newton, Leibniz, Cantor, Dedekind, Church, Gauss, Gödel, and how Boltzmann and Turing turned these truths loose in the material world.)
 {Notice that they are not answering this question: *Why is the world here?* Or the more philosophically refined version of the question: *Why is there anything instead of nothing?* If you want to go down the *rabbit hole*, like Alice in Wonderland, and explore these ideas further, jump right to the end of this document – page 34 (Sorry for making this so long. It’s for those who really want to dive in an learn some wicked cool ideas. (\*) Otherwise I will continue with introducing some more pre-Socratics.}**

“The tradition claims that Thales predicted a solar eclipse in 585 BC (11A5), introduced geometry into Greece from Egypt (11A11), and produced some engineering marvels. Anaximander is reported to have invented the gnomon (the raised piece of a sundial whose shadow marks time); to have created a sphere of the heavens serving as an astronomical and cosmological model (12A1); and to have been the first to draw a map of the inhabited world (12A6). Regardless of whether these reports are correct (and in the case of Thales' prediction they almost certainly are not), they indicate something important about the Milesians: their interests in measuring and explaining celestial and terrestrial phenomena were as strong as their concern with the more abstract inquiries into the causes and principles of substance and change attributed to them by Aristotle (Algra 1999, White 2002 and 2008). They did not see so-called “scientific” and “philosophical” questions as belonging to separate disciplines, requiring distinct methods of inquiry. The assumptions and principles that we (along with Aristotle) see as constituting the philosophical foundations of their theories are, for the most part, implicit in the claims that they make. Nevertheless, it is legitimate to treat the Milesians as having philosophical views, even though no clear statements of these views or specific arguments for them can be found in the surviving fragments and testimonia.

Aristotle's comments do not sound as if they were based on first-hand knowledge of Thales' views, and the doxographical reports say that Thales did not write a book. Yet Aristotle is confident that Thales belongs, even if honorifically, to that group of thinkers that he calls “inquirers into nature” and distinguishes him from earlier poetical “myth-makers.” In Book I of the Metaphysics, Aristotle claims that the earliest of these, among whom he places the Milesians, explained things only in terms of their matter (Met. I.3 983b6–18). This claim is anachronistic in that it presupposes Aristotle's own novel view that a complete explanation must encompass four factors: what he called the material, efficient, formal, and final causes. Yet there is something in what Aristotle says. Aristotle links Thales' claim that the world rests on water with the view that water was the archē, or fundamental principle, and he adds that “that from which they come to be is a principle of all things” (983b24–25; 11A12). He suggests that Thales chose water because of its fundamental role in coming-to-be, nutrition, and growth, and claims that water is the origin of the nature of moist things.

Aristotle's general assertion about the first thinkers who gave accounts of nature (and his specific discussion of Thales' reliance on water as a first principle) brings out a difficulty in interpreting the early Presocratics. According to Aristotle's general account, the Presocratics claimed that there was a single enduring material stuff that is both the origin of all things and their continuing nature. Thus, on this view, when Thales says that the first principle is water, he should be understood as claiming both that the original state of things was water and that even now (despite appearances), everything is really water in some state or another. The change from the original state to the present one involves changes in the material stuff such that although it may not now appear to be water everywhere (but seems to be airier or earthier than water in its usual state, or its original one), there is no transformation of water into a different kind of stuff (air or earth, for instance). Yet, when Aristotle comes to give what details he can of Thales' view, he suggests only that for Thales, water was the first principle because everything comes from water. Water, then, was perhaps the original state of things for Thales, and water is a necessary condition for everything that is generated naturally, but Aristotle's summary of Thales' view does not imply that Thales claimed that water endures through whatever changes have occurred since the original state, and now just has some new or additional properties. Thales may well have thought that certain characteristics of the original water persisted: in particular its capacity for motion (which must have been innate in order to generate the changes from the original state). This is suggested by Thales' reported claims that the lodestone (with its magnetic properties) and amber (which when rubbed exhibits powers of attraction through static electricity) have souls and that all things are full of gods. Aristotle surmises that Thales identified soul (that which makes a thing alive and thus capable of motion) with something in the whole universe, and so supposed that everything was full of gods (11A22)—water, or soul, being a divine natural principle. Certainly the claim that the lodestone has soul suggests this account. Given that the analysis of change (both qualitative and substantial) in terms of a substratum that gains and loses properties is Aristotelian (although perhaps foreshadowed in Plato), it is not surprising that the earlier views were unclear on this issue, and it is probable that the Milesian view did not clearly distinguish the notions of an original matter and an enduring underlying stuff (Graham 2006).”

“The reports about Thales show him employing a certain kind of explanation: ultimately the explanation of why things are as they are is grounded in water as the basic stuff of the universe and the changes that it undergoes through its own inherent nature. In this, Thales marks a radical change from all other previous sorts of accounts of the world (both Greek and non-Greek). Like the other Presocratics, Thales sees nature as a complete and self-ordering system, and sees no reason to call on divine intervention from outside the natural world to supplement his account—water itself may be divine, but it is not something that intervenes in the natural world from outside (Gregory, 2013). While the evidence for Thales' naturalistic account is circumstantial, this attitude can be directly verified for Anaximander.”

The next two are Anaximander and Anaximenes.

“A testimony about **Anaximander** from Pseudo-Plutarch (12A10) says that “Something productive of hot and cold was separated off from the eternal at the genesis of this world and from this a sphere of flame grew around the air around the earth like the bark around a tree.” Neither the cause nor the precise process of separation is explained, but it is probable that Anaximander would have thought of motion as innate and so that the original source of change was part of the character of the indefinite itself. The passage from Simplicius shows that Anaximander does not think that the eternal indefinite stuff gives rise directly to the cosmos as we know it. Rather, relying on a semi-biological model, Anaximander claims that the apeiron somehow generates the opposites hot and cold. Hot and cold are themselves stuffs with powers; and it is the actions of these stuffs/powers that produce the things that come to be in our world. The opposites act on, dominate, and contain each other, producing a regulated structure; thus things pass away into those things from which they came to be. It is this structured arrangement that Anaximander refers to when he speaks of justice and reparation. Over the course of time, the cycles of the seasons, the rotations of the heavens, and other sorts of cyclical change (including coming-to-be and passing-away) are regulated and thus form a system. This system, ruled by the justice of the ordering of time is in sharp contrast with the chaotic and capricious world of the personified Greek gods who interfere in the workings of the heavens and in the affairs of human beings (Kahn 1985a, Vlastos 1947, Guthrie 1962).

The pattern that can be seen in Thales and Anaximander of an original stuff giving rise to the phenomena of the cosmos continues in the views of the third of the Milesians, Anaximenes. He replaces **Anaximander's** apeiron with air, thus eliminating the first stage of the coming-to-be of the cosmos (the something productive of hot and cold). Rather, he returns to an originating stuff more like Thales' water. In 13A5, Aristotle's associate Theophrastus, quoted by Simplicius, speculates that Anaximenes chose air because he agreed that a basic principle must be neutral (as Anaximander's apeiron is) but not so lacking in properties that it seems to be nothing at all. Air can apparently take on various properties of color, temperature, humidity, motion, taste, and smell. Moreover, according to Theophrastus, Anaximenes explicitly states the natural mechanism for change; it is the condensation and rarefaction of air that naturally determine the particular characters of the things produced from the originating stuff. Rarified, air becomes fire; more and more condensed, it becomes progressively wind, cloud, water, earth, and finally stones. “The rest,” says Theophrastus, “come to be from these.” Plutarch says that condensation and rarefaction are connected with cooling and heating, and he gives the example of breath (13B1). Releasing air from the mouth with compressed lips produces cool air (as in cooling soup by blowing on it), but relaxed lips produce warm air (as when one blows on cold hands to warm them up).

Does the originating stuff persist through the changes that it undergoes in the generating processes? Aristotle's account suggests that it does, that Anaximenes, for instance, would have thought that stone was really air, although in an altered state, just as we might say that ice is really water, cooled to a point where it goes from a liquid to a solid state. Because the water does not cease to be water when it is cooled and becomes ice, it can return to a liquid when heated and then become a gas when more heat is applied. On this view, the Milesians were material monists, committed to the reality of a single material stuff that undergoes many alterations but persists through the changes (Barnes 1979, Guthrie 1962, Sedley 2007 and 2009). Yet there are reasons to doubt that this was actually the Milesian view. It presumes that the early Greek thinkers anticipated Aristotle's general theory that change requires enduring underlying substances that gain and lose properties. The earliest Greeks thought more in terms of powers (Vlastos 1947, Heidel 1906), and the metaphysical problem of what it is to be a substance was yet to be formulated. Clearly the Milesians were interested in the originating stuff from which the world developed (Anaximander and Anaximenes are explicit about transformations of such an eternal originating stuff), but the view that this endured as a single substratum may not have been theirs. Rather, it has been suggested by Graham (1997 and 2006; Mourelatos 2008) that the Milesians were not, in Aristotle's sense, material monists. On this view, the original/originating stuff is transformed into other substances. Anaximenes, for instance, may have thought that the change from air to water does not involve the persistence of air as any sort of substratum. There is no special role that air plays in the theory except that it is the originating stuff and so first in an analysis of the law-like cyclical changes that produce various stuffs as the cosmos develops (Graham 2006, ch. 4). Such an interpretation suggests how different the Milesian conception of the world is from Aristotle's.”

**Pythagoras is our next quarry.**

“Pythagoras, one of the most famous and controversial ancient Greek philosophers, lived from ca. 570 to ca. 490 BCE. He spent his early years on the island of Samos, off the coast of modern Turkey. At the age of forty, however, he emigrated to the city of Croton in southern Italy and most of his philosophical activity occurred there. Pythagoras wrote nothing, nor were there any detailed accounts of his thought written by contemporaries. By the first centuries BCE, moreover, it became fashionable to present Pythagoras in a largely unhistorical fashion as a semi-divine figure, who originated all that was true in the Greek philosophical tradition, including many of Plato's and Aristotle's mature ideas. A number of treatises were forged in the name of Pythagoras and other Pythagoreans in order to support this view.

**There is a lot of wonderful information and explanation below. I would love for you to read it, but it’s longish. (The article on Stanford’s website is considerably longer, but interesting.)**

**Here’s a sketch of Pythagoras’s importance for our purposes, getting ready to understand Plato**.

**As it mentioned above, little is known of the person. The ideas are associated with the Pythagorean groups – mystery cult. There were new religious movements in the Mediterranean are in the 7th and 6th bce {“before the common era.” Many years ago, academia replaced the old “B.C. and A.D.” with BCE and CE. “Before Christ” and “Anno Domini” [which means “the year of our Lord”] became “Before the common era” and “common era.”}**

***There was a passionate yearning for immortality, coupled with discontentedness with our finite, earthly existence* Samuel Enoch Stumpf once wrote. People knew, consciously, that they were alive and going to die. They wanted to know if there was a way we can transcend death. Various mystery cults emerged claiming they had answers.**

The **Dionysian Mysteries** were a [ritual](https://en.wikipedia.org/wiki/Ritual) of [ancient Greece](https://en.wikipedia.org/wiki/Ancient_Greece) and [Rome](https://en.wikipedia.org/wiki/Ancient_Rome) which used [intoxicants](https://en.wikipedia.org/wiki/Intoxicant) and other trance-inducing techniques (like dance and music) to remove inhibitions and social constraints, liberating the individual to return to a natural state. It also provided some liberation for those marginalized by Greek society: women, slaves and foreigners. In their final phase the Mysteries shifted their emphasis from a [chthonic](https://en.wikipedia.org/wiki/Chthonic), underworld orientation to a transcendental, mystical one, with [Dionysus](https://en.wikipedia.org/wiki/Dionysus) changing his nature accordingly. By its nature as a [mystery religion](https://en.wikipedia.org/wiki/Mystery_religion) reserved for the initiated, many aspects of the Dionysian cult remain unknown and were lost with the [decline of Greco-Roman polytheism](https://en.wikipedia.org/wiki/Decline_of_Greco-Roman_polytheism); modern knowledge is derived from descriptions, imagery and cross-cultural studies. ([**Wiki**](https://en.wikipedia.org/wiki/Dionysian_Mysteries))

**People today often use intoxicants of various types to alter consciousness. Children spin until they fall over. People go to concerts, take intoxicants, and listen and dance to music to get free of their problems. We call some alcoholic products *Spirits* for good reason.**

**The Pythagoreans were a mystery cult. But they were, in a way we might say it today, more *spiritual* in their approach. They thought music purified the soul, not alcohol, etc. The soul, which operates like the driver of a car, will be reincarnated – literally “put back” re-in “the meat” – the carne. Re-in-carnation.**

**They also thought that numbers were the bomb. Everything is made of numbers. {Don’t forget, numbers aren’t numerals. Numerals are things like 5. 5, or when spoken as “five”, is the *name* of the number represented by 5 or “five.” (I know it’s odd to talk like this.) Numbers are almost mystical objects. I can look at some cookies on a plate and say “There are five cookies on the plate.” But what is on the plate that answers to the “five”? There are only cookies. If my dog came upon the plate he would also confront the cookies, but would the number five be part of the story from the dog’s perspective? As much as I love my dog Jack, I think his nose is going hard and he is salivating! He’s not recognizing that “5” is a prime number and thus has certain properties which distinguish it from other number like “15” which merely adds a “1” in front.**

**Pythagoreans thought everything is *made* of numbers, and that mathematics is the key to understanding the world. That made them also prone to be numerologists. They had opinions about how we can correlate things in our world with special numbers. For instance, the #10 is divine. They made a shape which was called the Tetraktys. It is an arrangement of dots like that of bowling pins. It is shaped like a pyramid or triangle. One dot is on top. The next row contains two dots, then three, and at the bottom are four dots. Add them up and we get 10. I have read that it was a Holy Symbol. [Imagine a Pythagorean court. A witness is swearing in by placing his hand on the Tetraktys. “Do you swear to tell the truth, the whole truth, and nothing but the truth, so help you Tetraktys?” “I do.” “Then you may be seated.”]**

**We believe that they used pebbles to represent numbers. One pebble is a point, two allows you to draw a line, three and we get a shape, a triangle, four a square and so on. The entire world is built up from these points. (Today we might consider how we strongly believe that our bodies are composed of trillions upon trillions of atoms all of which follow mathematically describable paths. Modern science uses formulae [formulae is technically the correct way to write formulas – damn Latin!) to describe *how* things function. The precision of modern mathematics allows us to make incredible objects.**

 **You probably remember the Pythagorean Theorem: a² + b² = c². It’s said that Pythagoras sacrificed an animal to the gods when this was discovered: most likely hype from his publicist.**

**The Pythagoreans liked the idea that the planets in the sky circle the earth in harmonious paths. Together they produce the *Music of the Spheres*. This *music* is found in the physical relationships between the length of the strings on a tuned lyre [a musical instrument] and the sound: they express mathematical proportions - 12:6, 12:8, 12:9, and so on.**

**They believed that moderation between opposites was ideal: for instance health is attunement of body and soul. The Universe is an ordered, and not a chaotic place. We find order and mathematics gives an account, an explanation for, *how* things work. Math doesn’t explain *why* the object or process exists as it does. All we can explain is *how* it operates! When we know how, we can use that knowledge to make more efficient use of things to achieve our objectives. Horse drawn carts have been replaced by multi-horsepower engines. (Yes, we still think of power in terms of the animal.)**

**The Pythagoreans also thought that there were three types of people. The story we have of their idea is as follows. We are to imagine three types of people who attend the Olympic games. There are the *Lovers of Honor*, the athletes or participants. The *Lovers of Gain*, the venders selling food in the stands, and the *Lovers of Knowledge*, the spectators. The lowest level are the *Lovers of Gain*. They serve an important function, but their pursuits, with regard to living a full human life, is limited. They worship money. As David Foster Wallace says in the full version of his speech, the shortened version of which you heard on the first day of class:**

“*Because here's something else that's weird but true: in the day-to day trenches of adult life, there is actually no such thing as atheism. There is no such thing as not worshipping. Everybody worships. The only choice we get is what to worship. And the compelling reason for maybe choosing some sort of god or spiritual-type thing to worship -- be it JC* ***(Jesus Christ)*** *or Allah, be it YHWH* ***(the G\*d of the Jews)*** *or the Wiccan Mother Goddess, or the Four Noble Truths* ***(of Buddhism)****, or some inviolable set of ethical principles -- is that pretty much anything else you worship will eat you alive.*

*If you worship money and things, if they are where you tap real meaning in life, then you will never have enough, never feel you have enough. It's the truth.*

*Worship your body and beauty and sexual allure and you will always feel ugly. And when time and age start showing, you will die a million deaths before they finally grieve you.*

*On one level, we all know this stuff already. It's been codified as myths, proverbs, clichés, epigrams, parables; the skeleton of every great story. The whole trick is keeping the truth up front in daily consciousness.*

*Worship power, you will end up feeling weak and afraid, and you will need ever more power over others to numb you to your own fear. Worship your intellect, being seen as smart, you will end up feeling stupid, a fraud, always on the verge of being found out. But the insidious thing about these forms of worship is not that they're evil or sinful, it's that they're unconscious.*

*They are default settings.*

*They're the kind of worship you just gradually slip into, day after day, getting more and more selective about what you see and how you measure value without ever being fully aware that that's what you're doing. And the so-called real world will not discourage you from operating on your default settings, because the so-called real world of men and money and power hums merrily along in a pool of fear and anger and frustration and craving and worship of self. Our own present culture has harnessed these forces in ways that have yielded extraordinary wealth and comfort and personal freedom. The freedom all to be lords of our tiny skull-sized kingdoms, alone at the center of all creation.*

*This kind of freedom has much to recommend it. But of course there are all different kinds of freedom, and the kind that is most precious you will not hear much talk about much in the great outside world of wanting and achieving and [unintelligible -- sounds like "displayal"]. The really important kind of freedom involves attention and awareness and discipline, and being able truly to care about other people and to sacrifice for them over and over in myriad petty, unsexy ways every day.”*

***The Lovers of Honor* are higher: they pursue the experience of some higher ideal. The Olympic athletes of old competed to be best and wear a perishable wreath. It was about honor.**

**The *Lovers of Knowledge* take in the whole spectacle: observing as the witness to the events. This is the place from which one can explain *how* it works. The question of *why* is untouched.**

**Key ideas to connect with Plato:**

**Real knowledge (like mathematical knowledge) is unchanging; sense knowledge changes so it provides no REAL knowledge. Plato is by training (and most likely temperament) a mathematician. He likes the perfection of things like triangles. There is an idea of Triangularity: A three-sided, enclosed geometric figure the sum of whose interior angles is 180°. It is an eternal idea. Triangles come and go. But the idea of triangle is eternal.**

**Plato agrees that there is a soul in the body. He calls the body the *prison-house* of the soul. (There will be more on this topic later in the discussion of Plato’s ideas.)**

**Plato thought that if you have laws of nature and the correct mathematical tools, you could know all there is to know. (We still kind of think that’s true. New forms of mathematics has helped reveal how things work in much more detail.)**

**And finally Plato ends up also using the division of humanity into three types of people. Plato will say, metaphorically, that there are *Gold, Silver and Bronze* souls which inhabit different people. The majority have *Bronze* souls, a smaller group, sitting on the next level of a pyramid are the *Silver* souled people, and at the top a small group of *Gold* souled individuals. Plato will see this as a *class structure* for society. Philosopher Kings are on top (men and women!), then the silver military to protect the society from outside threats, and finally the vast majority are bronze people (an alloy of copper and tin). In the Greek, these people are the demos, from which we get the word Democracy. (We are ruled by the people ultimately.)**

**What follows is more detail on Pythagoras. Feel free to skip or skim these details with regard to your own time and interest constraints: but start reading again at the next purple writing.**

What were the beliefs and practices of the historical Pythagoras? This apparently simple question has become the daunting Pythagorean question for several reasons. First, Pythagoras himself wrote nothing, so our knowledge of Pythagoras' views is entirely derived from the reports of others. Second, there was no extensive or authoritative contemporary account of Pythagoras. No one did for Pythagoras what Plato and Xenophon did for Socrates. Third, only fragments of the first detailed accounts of Pythagoras, written about 150 years after his death, have survived. Fourth, it is clear that these accounts disagreed with one another on significant points. These four points would already make the problem of determining Pythagoras' philosophical beliefs more difficult than determining those of almost any other ancient philosopher, but a fifth factor complicates matters even more. By the third century CE, when the first detailed accounts of Pythagoras that survive intact were written, Pythagoras had come to be regarded, in some circles, as the master philosopher, from whom all that was true in the Greek philosophical tradition derived. By the end of the first century BCE, a large collection of books had been forged in the name of Pythagoras and other early Pythagoreans, which purported to be the original Pythagorean texts from which Plato and Aristotle derived their most important ideas. A treatise forged in the name of Timaeus of Locri was the supposed model for Plato's Timaeus, just as forged treatises assigned to Archytas were the supposed model for Aristotle's Categories. Pythagoras himself was widely presented as having anticipated Plato's later metaphysics, in which the one and the indefinite dyad are first principles. Thus, not only is the earliest evidence for Pythagoras' views meager and contradictory, it is overshadowed by the hagiographical presentation of Pythagoras, which became dominant in late antiquity. Given these circumstances, the only reliable approach to answering the Pythagorean question is to start with the earliest evidence, which is independent of the later attempts to glorify Pythagoras, and to use the picture of Pythagoras which emerges from this early evidence as the standard against which to evaluate what can be accepted and what must be rejected in the later tradition. Following such an approach, Walter Burkert, in his epoch-making book (1972a), revolutionized our understanding of the Pythagorean question, and all modern scholarship on Pythagoras, including this article, stands on his shoulders.

One of the manifestations of the attempt to glorify Pythagoras in the later tradition is the report that he, in fact, invented the word philosophy. This story goes back to the early Academy, since it is first found in Heraclides of Pontus (Cicero, Tusc. V 3.8; Diogenes Laertius, Proem). The historical accuracy of the story is called into question by its appearance not in a historical or biographical text but rather in a dialogue that recounted Empedocles' revival of a woman who had stopped breathing. Moreover, the story depends on a conception of a philosopher as having no knowledge but being situated between ignorance and knowledge and striving for knowledge. Such a conception is thoroughly Platonic, however (see, e.g., Symposium 204A), and Burkert demonstrated that it could not belong to the historical Pythagoras (1960). For a recent attempt to defend at least the partial accuracy of the story, see Riedweg 2005: 90–97 and the response by Huffman 2008a:207–208; see also Zhmud 2012a, 428-430.

Even if he did not invent the word, what can we say about the philosophy of Pythagoras? For the reasons given in 1. The Pythagorean Question and 2. Sources above, any responsible account of Pythagoras' philosophy must be based in the first place on the evidence prior to Aristotle and in the second place on evidence that our sources explicitly identify as deriving from Aristotle's books on the Pythagoreans as well as from the books of his pupils such as Aristoxenus and Dicaearchus. There is general agreement as to what the pre-Aristotelian evidence is, although there are differences in interpretation of it. There is less agreement as to what should be included in Aristotle's, Dicaearchus' and Aristoxenus' evidence. What one includes as evidence from these authors will have a significant effect on one's picture of Pythagoras. One particularly pressing question is whether both chapters 18 and 19 of Porphyry's Life of Pythagoras should be regarded as deriving from Dicaearchus, as the most recent editor proposes (Mirhady Fr. 40), or whether only chapter 18 should be included, as in the earlier edition of Wehrli (Fr.33). It is crucial to decide this question before developing a picture of the philosophy of Pythagoras since chapter 19, if it is by Dicaearchus, is our earliest summary of Pythagorean philosophy. Porphyry is very reliable about quoting his sources. He explicitly cites Dicaearchus at the beginning of Chapter 18 and names Nicomachus as his source at the beginning of chapter 20. The material in chapter 19 follows seamlessly on chapter 18: the description of the speeches that Pythagoras gave upon his arrival in Croton in chapter 18 is followed in chapter 19 by an account of the disciples that he gained as the result of those speeches and a discussion of what he taught these disciples. Thus, the onus is on anyone who would claim that Porphyry changes sources before the explicit change at the beginning of chapter 20. Chapter 19 provides a very restrained account of what can be reliably known about Pythagoras' teachings and that very restraint is one of the strongest supporting arguments for its being based on Dicaearchus, since Porphyry or anyone else in the luxuriant later tradition would be expected to give a much more expanisve presentation of Pythagoras in accordance with the Neopythagorean view of him (Burkert 1972a, 122-123). Wehrli gives no reason for not including chapter 19 and the great majority of scholars accept it as being based on Dicaearchus (see the references in Burkert 1972a, 122, n.7). Zhmud (2012a, 157) following Philip (1966, 139) argues that the passage cannot derive from Dicaearchus, since it presents immortality of the soul with approval, whereas Dicaearchus did not accept its immortality. However, the passage merely reports that Pythagoras introduced the notion of the immortality of the soul without expressing approval or disapproval. Zhmud lists other features of the chapter that he regards as unparalleled in fourth-century sources (2012a, 157) but, since the evidence is so fragmentary, such arguments from silence can carry little weight. Nothing in the chapter is demonstrably late or inconsistent with Dicaearchus' authorship so we must follow what is suggested by the context in Porphyry and regard it as derived from Dicaearchus.

In the face of the Pythagorean question and the problems that arise even regarding the early sources, it is reasonable to wonder if we can say anything about Pythagoras. A minimalist might argue that the early evidence only allows us to conclude that Pythagoras was a historical figure who achieved fame for his wisdom but that it is impossible to determine in what that wisdom consisted. We might say that he was interested in the fate of the soul and taught a way of life, but we can say nothing precise about the nature of that life or what he taught about the soul (Lloyd 2014). There is some reason to believe, however, that something more than this can be said.

The earliest evidence makes clear that above all Pythagoras was known as an expert on the fate of our soul after death. Herodotus tells the story of the Thracian Zalmoxis, who taught his countrymen that they would never die but instead go to a place where they would eternally possess all good things (IV. 95). Among the Greeks the tradition arose that this Zalmoxis was the slave of Pythagoras. Herodotus himself thinks that Zalmoxis lived long before Pythagoras, but the Greeks' willingness to portray Zalmoxis as Pythagoras' slave shows that they thought of Pythagoras as the expert from whom Zalmoxis derived his teaching. Ion of Chios (5th c. BCE) says of Phercydes of Syros that “although dead he has a pleasant life for his soul, if Pythagoras is truly wise, who knew and learned wisdom beyond all men.” Here Pythagoras is again the expert on the life of the soul after death. A famous fragment of Xenophanes, Pythagoras' contemporary, provides some more specific information on what happens to the soul after death. He reports that “once when he [Pythagoras] was present at the beating of a puppy, he pitied it and said ‘stop, don't keep hitting him, since it is the soul of a man who is dear to me, which I recognized, when I heard it yelping’” (Fr. 7). Although Xenophanes clearly finds the idea ridiculous, the fragment shows that Pythagoras believed in metempsychosis or reincarnation, according to which human souls were reborn into other animals after death. This early evidence is emphatically confirmed by Dicaearchus in the fourth century, who first comments on the difficulty of determining what Pythagoras taught and then asserts that his most recognized doctrines were “that the soul is immortal and that it transmigrates into other kinds of animals” (Porphyry, VP 19). Unfortunately we can say little more about the details of Pythagoras' conception of metempsychosis. According to Herodotus, the Egyptians believed that the soul was reborn as every sort of animal before returning to human form after 3,000 years. Without naming names, he reports that some Greeks both earlier and later adopted this doctrine; this seems very likely to be a reference to Pythagoras (earlier) and perhaps Empedocles (later). Many doubt that Herodotus is right to assign metempsychosis to the Egyptians, since none of the other evidence we have for Egyptian beliefs supports his claim, but it is nonetheless clear that we cannot assume that Pythagoras accepted the details of the view Herodotus ascribes to them. Similarly both Empedocles (see Inwood 2001, 55–68) and Plato (e.g., Republic X and Phaedrus) provide a more detailed account of transmigration of souls, but neither of them ascribes these details to Pythagoras nor should we. Did he think that we ever escape the cycle of reincarnations? We simply do not know. The fragment of Ion quoted above may suggest that the soul could have a pleasant existence after death between reincarnations or even escape the cycle of reincarnation altogether, but the evidence is too weak to be confident in such a conclusion. In the fourth century several authors report that Pythagoras remembered his previous human incarnations, but the accounts do not agree on the details. Dicaearchus (Aulus Gellius IV. 11.14) and Heraclides (Diogenes Laertius VIII. 4) agree that he was the Trojan hero Euphorbus in a previous life. Dicaearchus continues the tradition of savage satire begun by Xenophanes, when he suggests that Pythagoras was the beautiful prostitute, Alco, in another incarnation (Huffman 2014b, 281-285).

It is not clear how Pythagoras conceived of the nature of the transmigrating soul but a few tentative conjectures can be made (Huffman 2009). Transmigration does not require that the soul be immortal; it could go through several incarnations before perishing. Dicaearchus explicitly says that Pythagoras regarded the soul as immortal, however, and this agrees with Herodotus' description of Zalmoxis' view. It is likely that he used the Greek word psychê to refer to the transmigrating soul, since this is the word used by all sources reporting his views, unlike Empedocles, who used daimon. His successor, Philoalus, uses psychê to refer not to a comprehensive soul but rather to just one psychic faculty, the seat of emotions, which is located in the heart along with the faculty of sensation (Philolaus, Fr. 13). This psychê is explicitly said by Philolaus to be shared with animals. Herodotus uses psychê in a similar way to refer to the seat of emotions. Thus it seems likely that Pythagoras too thought of the transmigrating psychê in this way. If so, it is unlikely that Pythagoras thought that humans could be reincarnated as plants, since psychê is not assigned to plants by Philolaus. It has often been assumed that the transmigrating soul is immaterial, but Philolaus seems to have a materialistic conception of soul and he may be following Pythagoras. Similarly, it is doubtful that Pythagoras thought of the transmigrating soul as a comprehensive soul that includes all psychic faculties. His ability to recognize something distinctive of his friend in the puppy (if this is not pushing the evidence of a joke too far) and to remember his own previous incarnations show that personal identity was preserved through incarnations. This personal identity could well be contained in the pattern of emotions, that constitute a person's character and that is preserved in the psychê and need not presuppose all psychic faculties. In Philolaus this psychê explicitly does not include the nous (intellect), which is not shared with animals. Thus, it would appear that what is shared with animals and which led Pythagoras to suppose that they had special kinship with human beings (Dicaearchus in Porphyry, VP 19) is not intellect, as some have supposed (Sorabji 1993, 78 and 208) but rather the ability to feel emotions such as pleasure and pain.

There are significant points of contact between the Greek religious movement known as Orphism and Pythagoreanism, but the evidence for Orphism is at least as problematic as that for Pythagoras and often complicates rather than clarifies our understanding of Pythagoras (Betegh 2014; Burkert 1972a, 125 ff.; Kahn 2002, 19–22; Riedweg 2002). There is some evidence that the Orphics also believed in metempsychosis and considerable debate has arisen as to whether they borrowed the doctrine from Pythagoras (Burkert 1972a, 133; Bremmer 2002, 24) or he borrowed it from them (Zhmud 2012a, 221-238). Dicaearchus says that Pythagoras was the first to introduce metempsychosis into Greece (Porphyry VP 19). Moreover, while Orphism presents a heavily moralized version of metempsychosis in accordance with which we are born again for punishment in this life so that our body is the prison of the soul while it undergoes punishment, it is not clear that the same was true in Pythagoreanism. It may be that rebirths in a series of animals and people were seen as a natural cycle of the soul (Zhmud 2012a, 232-233). One would expect that the Pythagorean way of life was connected to metempsychosis, which would in turn suggest that a certain reincarnation is a reward or punishment for following or not following the principles set out in that way of life. However, there is no unambiguous evidence connecting the Pythagorean way of life with metempsychosis.

It is crucial to recognize that most Greeks followed Homer in believing that the soul was an insubstantial shade, which lived a shadowy existence in the underworld after death, an existence so bleak that Achilles famously asserts that he would rather be the lowest mortal on earth than king of the dead (Homer, Odyssey XI. 489). Pythagoras' teachings that the soul was immortal, would have other physical incarnations and might have a good existence after death were striking innovations that must have had considerable appeal in comparison to the Homeric view. According to Dicaearchus, in addition to the immortality of the soul and reincarnation, Pythagoras believed that “after certain periods of time the things that have happened once happen again and nothing is absolutely new” (Porphyry, VP 19). This doctrine of “eternal recurrence” is also attested by Aristotle's pupil Eudemus, although he ascribes it to the Pythagoreans rather than to Pythagoras himself. (Fr. 88 Wehrli). The doctrine of transmigration thus seems to have been extended to include the idea that we and indeed the whole world will be reborn into lives that are exactly the same as those we are living and have already lived.

In the modern world Pythagoras is most of all famous as a mathematician, because of the theorem named after him, and secondarily as a cosmologist, because of the striking view of a universe ascribed to him in the later tradition, in which the heavenly bodies produce “the music of the spheres” by their movements. It should be clear from the discussion above that, while the early evidence shows that Pythagoras was indeed one of the most famous early Greek thinkers, there is no indication in that evidence that his fame was primarily based on mathematics or cosmology. Neither Plato nor Aristotle treats Pythagoras as having contributed to the development of Presocratic cosmology, although Aristotle in particular discusses the topic in some detail in the first book of the Metaphysics and elsewhere. Aristotle evidently knows of no cosmology of Pythagoras that antedates the cosmological system of the “so-called Pythagoreans,” which he dates to the middle of the fifth century, and which is found in the fragments of Philolaus. There is also no mention of Pythagoras' work in geometry or of the Pythagorean theorem in the early evidence. Dicaearchus comments that “what he said to his associates no one can say reliably,” but then identifies four doctrines that became well known: 1) that the soul is immortal; 2) that it transmigrates into other kinds of animals; 3) that after certain intervals the things that have happened once happen again, so that nothing is completely new; 4) that all animate beings belong to the same family (Porphyry, VP 19). Thus, for Dicaearchus too, it is not as a mathematician or Presocratic writer on nature that Pythagoras is famous. It might not be too surprising that Plato, Aristotle and Dicaearchus do not mention Pythagoras' work in mathematics, because they are not primarily dealing with the history of mathematics. On the other hand, Aristotle's pupil Eudemus did write a history of geometry in the fourth century and what we find in Eudemus is very significant. A substantial part of Eudemus' overview of the early history of Greek geometry is preserved in the prologue to Proclus' commentary on Book One of Euclid's Elements (p. 65, 12 ff.), which was written much later, in the fifth century CE. At first sight, it appears that Eudemus did assign Pythagoras a significant place in the history of geometry. Eudemus is reported as beginning with Thales and an obscure figure named Mamercus, but the third person mentioned by Proclus in this report is Pythagoras, immediately before Anaxagoras. There is no mention of the Pythagorean theorem, but Pythagoras is said to have transformed the philosophy of geometry into a form of liberal education, to have investigated its theorems in an immaterial and intellectual way and specifically to have discovered the study of irrational magnitudes and the construction of the five regular solids. Unfortunately close examination of the section on Pythagoras in Proclus' prologue reveals numerous difficulties and shows that it comes not from Eudemus but from Iamblichus with some additions by Proclus himself (Burkert 1972a, 409 ff.). The first clause is taken word for word from Iamblichus' On Common Mathematical Science (p. 70.1 Festa). Proclus elsewhere quotes long passages from Iamblichus and is doing the same here. As Burkert points out, however, as soon as we recognize that Proclus has inserted a passage from Iamblichus into Eudemus' history, we must also recognize that Proclus was driven to do so by the lack of any mention of Pythagoras in Eudemus. Even those who want to assign Pythagoras a larger role in early Greek mathematics recognize that most of what Proclus says here cannot go back to Eudemus (Zhmud 2012a, 263-266). Thus, not only is Pythagoras not commonly known as a geometer in the time of Plato and Aristotle, but also the most authoritative history of early Greek geometry assigns him no role in the history of geometry in the overview preserved in Proclus. According to Proclus, Eudemus did report that two propositions, which are later found in Euclid's Elements, were discoveries of the Pythagoreans (Proclus 379 and 419). Eudemus does not assign the discoveries to any specific Pythagorean, and they are hard to date. The discoveries might be as early as Hippasus in the middle of the fifth century, who is associated with a group of Pythagoreans known as the mathematici, who arose after Pythagoras' death (see below). The crucial point to note is that Eudemus does not assign these discoveries to Pythagoras himself. The first Pythagorean whom we can confidently identify as an accomplished mathematician is Archytas in the late fifth and the first half of the fourth century.

Are we to conclude, then, that Pythagoras had nothing to do with mathematics or cosmology? The evidence is not quite that simple. The tradition regarding Pythagoras' connection to the Pythagorean theorem reveals the complexity of the problem. None of the early sources, including Plato, Aristotle and their pupils shows any knowledge of Pythagoras' connection to the theorem. Almost a thousand years later, in the fifth century CE, Proclus, in his commentary on Euclid's proof of the theorem (Elements I. 47), gives the following report: “If we listen to those who wish to investigate ancient history, it is possible to find them referring this theorem back to Pythagoras and saying that he sacrificed an ox upon its discovery” (426.6). Proclus gives no indication of his source, but a number of other late reports (Diogenes Laertius VIII. 12; Athenaeus 418f; Plutarch, Moralia 1094b) show that it ultimately relied on two lines of verse whose context is unknown: “When Pythagoras found that famous diagram, in honor of which he offered a glorious sacrifice of oxen...” The author of these verses is variously identified as Apollodorus the calculator or Apollodorus the arithmetician. This Apollodorus probably dates before Cicero, who alludes to the story (On the Nature of the Gods III. 88), and, if he can be identified with Apollodorus of Cyzicus, the follower of Democritus, the story would go back to the fourth century BCE (Burkert 1972a, 428). Two lines of poetry of indeterminate date are obviously a very slender support upon which to base Pythagoras' reputation as a geometer, but they cannot be simply ignored. Several things need to be noted about this tradition, however, in order to understand its true significance. First, Proclus does not ascribe a proof of the theorem to Pythagoras but rather goes on to contrast Pythagoras as one of those “knowing the truth of the theorem” with Euclid who not only gave the proof found in Elements I.47 but also a more general proof in VI. 31. Although a number of modern scholars have speculated on what sort of proof Pythagoras might have used (e.g., Heath 1956, 352 ff.), it is important to note that there is not a jot of evidence for a proof by Pythagoras; what we know of the history of Greek geometry makes such a proof by Pythagoras improbable, since the first work on the elements of geometry, upon which a rigorous proof would be based, is not attested until Hippocrates of Chios, who was active after Pythagoras in the latter part of the fifth century (Proclus, A Commentary on the First Book of Euclid's Elements, 66). All that this tradition ascribes to Pythagoras, then, is discovery of the truth contained in the theorem. The truth may not have been in general form but rather focused on the simplest such triangle (with sides 3, 4 and 5), pointing out that such a triangle and all others like it will have a right angle. Modern scholarship has shown, moreover, that the truth of the theorem as an arithmetical technique, once again without proof, was known before Pythagoras among the Babylonians (Burkert 1972a, 429), so it is possible that Pythagoras just passed on to the Greeks a truth that he learned from the East. The emphasis in the two lines of verse is not just on Pythagoras' discovery of the truth of the theorem, it is as much or more on his sacrifice of oxen in honor of the discovery. We are probably supposed to imagine that the sacrifice was not of a single ox; Apollodorus describes it as “a famous sacrifice of oxen” and Diogenes Laertius paraphrases this as a hecatomb, which need not be, as it literally says, a hundred oxen, but still suggests a large number. Some have wanted to doubt the whole story, including the discovery of the theorem, because it conflicts with Pythagoras' supposed vegetarianism, but it is far from clear to what extent he was a vegetarian (see above). If the story is to have any force and if it dates to the fourth century, it shows that Pythagoras was famous for a connection to a certain piece of geometrical knowledge, but it also shows that he was famous for his enthusiastic response to that knowledge, as evidenced in his sacrifice of oxen, not for any geometric proof. What emerges from this evidence, then, is not Pythagoras as the master geometer, who provides rigorous proofs, but rather Pythagoras as someone who recognizes and celebrates certain geometrical relationships as of high importance.

It is striking that a very similar picture of Pythagoras emerges from the evidence for his cosmology. A famous discovery is attributed to Pythagoras in the later tradition, i.e., that the central musical concords (the octave, fifth and fourth) correspond to the whole number ratios 2 : 1, 3 : 2 and 4 : 3 respectively (e.g., Nicomachus, Handbook 6 = Iamblichus, On the Pythagorean Life 115). The only early source to associate Pythagoras with the whole number ratios that govern the concords is Xenocrates (Fr. 9) in the early Academy, but the early Academy is precisely one source of the later exaggerated tradition about Pythagoras (see above). One story has it that Pythagoras passed by a blacksmith's shop and heard the concords in the sounds of the hammers striking the anvil and then discovered that the sounds made by hammers whose weights are in the ratio 2 : 1 will be an octave apart, etc. Unfortunately, the stories of Pythagoras' discovery of these relationships are clearly false, since none of the techniques for the discovery ascribed to him would, in fact, work (e.g., the pitch of sounds produced by hammers is not directly proportional to their weight: see Burkert 1972a, 375). An experiment ascribed to Hippasus, who was active in the first half of the fifth century, after Pythagoras' death, would have worked, and thus we can trace the scientific verification of the discovery at least to Hippasus; knowledge of the relation between whole number ratios and the concords is clearly found in the fragments of Philolaus (Fr. 6a, Huffman), in the second half of the fifth century. There is some evidence that the truth of the relationship was already known to Pythagoras' contemporary, Lasus, who was not a Pythagorean (Burkert 1972a, 377). It may be once again that Pythagoras knew of the relationship without either having discovered it or having demonstrated it scientifically. The relationship was probably first discovered by instrument makers, and specifically makers of wind instruments rather than stringed instruments (Barker 2014, 202). The acusmata reported by Aristotle, which may go back to Pythagoras, report the following question and answer “What is the oracle at Delphi? The tetraktys, which is the harmony in which the Sirens sing” (Iamblichus, On the Pythagorean Life, 82, probably derived from Aristotle). The tetraktys, literally “the four,” refers to the first four numbers, which when added together equal the number ten, which was regarded as the perfect number in fifth-century Pythagoreanism. Here in the acusmata, these four numbers are identified with one of the primary sources of wisdom in the Greek world, the Delphic oracle. In the later tradition the tetraktys is treated as the summary of all Pythagorean wisdom, since the Pythagoreans swore oaths by Pythagoras as “the one who handed down the tetraktys to our generation.” The tetraktys can be connected to the music which the Sirens sing in that all of the ratios that correspond to the basic concords in music (octave, fifth and fourth) can be expressed as whole number ratios of the first four numbers. This acusma thus seems to be based on the knowledge of the relationship between the concords and the whole number ratios. The picture of Pythagoras that emerges from the evidence is thus not of a mathematician, who offered rigorous proofs, or of a scientist, who carried out experiments to discover the nature of the natural world, but rather of someone who sees special significance in and assigns special prominence to mathematical relationships that were in general circulation. This is the context in which to understand Aristoxenus' remark that “Pythagoras most of all seems to have honored and advanced the study concerned with numbers, having taken it away from the use of merchants and likening all things to numbers” (Fr. 23, Wehrli). Some might suppose that this is a reference to a rigorous treatment of arithmetic, such as that hypothesized by Becker (1936), who argued that Euclid IX. 21–34 was a self-contained unit that represented a deductive theory of odd and even numbers developed by the Pythagoreans (see Mueller 1997, 296 ff. and Burkert 1972a, 434 ff.). It is crucial to recognize, however, that Becker's reconstruction is rejected in some recent scholarship (e.g., Netz 2014, 179) and no ancient source assigns it even to the Pythagoreans, let alone to Pythagoras himself. There is, moreover, no talk of mathematical proof or a deductive system in the passage from Aristoxenus just quoted. Pythagoras is known for the honor he gives to number and for removing it from the practical realm of trade and instead pointing to correspondences between the behavior of number and the behavior of things. Such correspondences were highlighted in Aristotle's book on the Pythagoreans, e.g., the female is likened to the number two and the male to the number three and their sum, five, is likened to marriage (Aristotle, Fr. 203).

What then was the nature of Pythagoras' cosmos? The doxographical tradition reports that Pythagoras discovered the sphericity of the earth, the five celestial zones and the identity of the evening and morning star (Diogenes Laertius VIII. 48, Aetius III.14.1, Diogenes Laertius IX. 23). In each case, however, Burkert has shown that these reports seem to be false and the result of the glorification of Pythagoras in the later tradition, since the earliest and most reliable evidence assigns these same discoveries to someone else (1972a, 303 ff.). Thus, Theophrastus, who is the primary basis of the doxographical tradition, says that it was Parmenides who discovered the sphericity of the earth (Diogenes Laertius VIII. 48). Parmenides is also identified as the discoverer of the identity of the morning and evening star (Diogenes Laertius IX. 23), and Pythagoras' claim appears to be based on a poem forged in his name, which was rejected already by Callimachus in the third century BCE (Burkert 1972a, 307). The identification of the five celestial zones depends on the discovery of the obliquity of the ecliptic, and some of the doxography duly assigns this discovery to Pythagoras as well and claims that Oenopides stole it from Pythagoras (Aetius II.12.2); the history of astronomy by Aristotle's pupil Eudemus, our most reliable source, seems to attribute the discovery to Oenopides (there are problems with the text), however (Eudemus, Fr. 145 Wehrli). It thus appears that the later tradition, finding no evidence for Pythagoras' cosmology in the early evidence, assigned the discoveries of Parmenides back to Pythagoras, encouraged by traditions which made Parmenides the pupil of Pythagoras. In the end, there is no evidence for Pythagoras' cosmology in the early evidence, beyond what can be reconstructed from acusmata. As was shown above, Pythagoras saw the cosmos as structured according to number insofar as the tetraktys is the source of all wisdom. His cosmos was also imbued with a moral significance, which is in accordance with his beliefs about reincarnation and the fate of the soul (West 1971, 215-216; Huffman 2013, 60-68). Thus, in answer to the question “What are the Isles of the Blest?” (where we might hope to go, if we lived a good life), the answer is “the sun and the moon.” Again “the planets are the hounds of Persephone,” i.e., the planets are agents of vengeance for wrong done (Aristotle in Porphyry VP 41). Aristotle similarly reports that for the Pythagoreans thunder “is a threat to those in Tartarus, so that they will be afraid” (Posterior Analytics 94b) and another acusma says that “an earthquake is nothing other than a meeting of the dead” (Aelian, Historical Miscellany, IV. 17). Zhmud calls these cosmological acusmata into question (2012a, 329-330), noting that some only appear in Porphyry, but Porphyry explicitly identifies Aristotle as his source and we have no reason to doubt him (VP 41). Pythagoras' cosmos embodied mathematical relationships that had a basis in fact and combined them with moral ideas tied to the fate of the soul. The best analogy for the type of account of the cosmos which Pythagoras gave might be some of the myths which appear at the end of Platonic dialogues such as the Phaedo, Gorgias or Republic, where cosmology has a primarily moral purpose. Should the doctrine of the harmony of the spheres be assigned to Pythagoras? Certainly the acusma which talks of the sirens singing in the harmony represented by the tetraktys suggests that there might have been a cosmic music and that Pythagoras may well have thought that the heavenly bodies, which we see move across the sky at night, made music by their motions. On the other hand, there is no evidence for “the spheres,” if we mean by that a cosmic model according to which each of the heavenly bodies is associated with a series of concentric circular orbits, a model which is at least in part designed to explain celestical phenomena. The first such cosmic model in the Pythagorean tradition is that of Philolaus in the second half of the fifth century, a model which still shows traces of the connection to the moral cosmos of Pythagoras in its account of the counter-earth and the central fire (see Philolaus).

If Pythagoras was primarily a figure of religious and ethical significance, who left behind an influential way of life and for whom number and cosmology primarily had significance in this religious and moral context, how are we to explain the prominence of rigorous mathematics and mathematical cosmology in later Pythagoreans such as Philolaus and Archytas? It is important to note that this is not just a question asked by modern scholars but was already a central question in the fourth century BCE. What is the connection between Pythagoras and fifth-century Pythagoreans? The question is implicit in Aristotle's description of the fifth-century Pythagoreans such as Philolaus as “the so-called Pythagoreans.” This expression is most easily understood as expressing Aristotle's recognition that these people were called Pythagoreans and at the same time his puzzlement as to what connection there could be between the wonder-worker who promulgated the acusmata, which his researches show Pythagoras to have been, and the philosophy of limiters and unlimiteds put forth in fifth-century Pythagoreanism. The tradition of a split between two groups of Pythagoreans in the fifth century, the mathematici and the acusmatici, points to the same puzzlement. The evidence for this split is quite confused in the later tradition, but Burkert (1972a, 192 ff.) has shown that the original and most objective account of the split is found in a passage of Aristotle's book on the Pythagoreans, which is preserved in Iamblichus (On Common Mathematical Science, 76.19 ff). The acusmatici, who are clearly connected by their name to the acusmata, are recognized by the other group, the mathematici, as genuine Pythagoreans, but the acusmatici do not regard the philosophy of the mathematici as deriving from Pythagoras but rather from Hippasus. The mathematici appear to have argued that, while the acusmatici were indeed Pythagoreans, it was the mathematici who were the true Pythagoreans; Pythagoras gave the acusmata to those who did not have the time to study the mathematical sciences, so that they would at least have moral guidance, while to those who had the time to fully devote themselves to Pythagoreanism he gave training in the mathematical sciences, which explained the reasons for this guidance. This tradition thus shows that all agreed that the acusmata represented the teaching of Pythagoras, but that some regarded the mathematical work associated with the mathematici as not deriving from Pythagoras himself, but rather from Hippasus (on the controversy about the evidence for this split into two groups of Pythagoreans see the fifth paragraph of section 4.3 above). For fourth-century Greeks as for modern scholars, the question is whether the mathematical and scientific side of later Pythagoreanism derived from Pythagoras or not. If there were no intelligible way to understand how later Pythagoreanism could have arisen out of the Pythagoreanism of the acusmata, the puzzle of Pythagoras' relation to the later tradition would be insoluble. The cosmos of the acusmata, however, clearly shows a belief in a world structured according to mathematics, and some of the evidence for this belief may have been drawn from genuine mathematical truths such as those embodied in the “Pythagorean” theorem and the relation of whole number ratios to musical concords. Even if Pythagoras' cosmos was of primarily moral and symbolic significance, these strands of mathematical truth, which were woven into it, would provide the seeds from which later Pythagoreanism grew. Philolaus' cosmos and his metaphysical system, in which all things arise from limiters and unlimiteds and are known through numbers, are not stolen from Pythagoras. They embody a conception of mathematics, which owes much to the more rigorous mathematics of Hippocrates of Chios in the middle of the fifth century; the contrast between limiter and unlimited makes most sense after Parmenides' emphasis on the role of limit in the first part of the fifth century. Philolaus' system is nonetheless an intelligible development of the reverence for mathematical truth found in Pythagoras' own cosmological scheme, which is embodied in the acusmata.

**Okay, now we are ready to start talking Heraclitus and Parmenides.**

“Little is known of Heraclitus' life; most of what has been handed down consists of stories apparently invented to illustrate his character as inferred from his writings (Diogenes Laertius 9.1–17). His native Ephesus was a prominent city of Ionia, the Greek-inhabited coast of Asia Minor, but was subject to Persian rule in his lifetime. According to one account, he inherited the honorific title and office of “king” of the Ionians, which he resigned to his brother. He is generally considered to have favored aristocratic government as against democracy, based on his own political observations.” <https://plato.stanford.edu/entries/heraclitus/>

Heraclitus: He looks at the world and sees motion. Everything is in flux and *becoming*. This idea of constant change is familiar to us who live with the knowledge of atomic theory. We believe, in a way, that we are composed of tiny little things called “Atoms.” We are told that they are in constant motion. Even though we feel stable, the basic building blocks are always in motion. A motion, like a current we cannot consciously feel, but know must exist. He says, metaphorically perhaps, that everything is made of “fire.” Not literally on fire, on “fire” in the way fire always flickers and changes. Fire purifies and transforms one thing into another. Wood turns into heat and ash when exposed to fire. Nothing is ever lost; it merely changes form. The change or flux is orderly because there is Logos which acts like the laws of nature to organize the change. (Again, if this satisfactory, jump ahead to Parmenides.)

“Heraclitus made every effort to break out of the mold of contemporary thought. Although he was influenced in a number of ways by the thought and language of his predecessors, including the epic poets Homer and Hesiod, the poet and philosopher Xenophanes, the historian and antiquarian Hecataeus, the religious guru Pythagoras, the sage Bias of Priene, the poet Archilochus, and the Milesian philosophers, he criticized most of them either explicitly or implicitly, and struck out on his own path. He rejected *polumathiê* or information-gathering on the grounds that it “does not teach understanding” (B40). He treated the epic poets as fools and called Pythagoras a fraud.

In his fragments Heraclitus does not explicitly criticize the Milesians, and it is likely that he saw them as the most progressive of previous thinkers. He does tacitly criticize Anaximander for not appreciating the role of injustice in the world (B80), while he might have expressed some admiration for Thales (B38). His views can be seen to embody structural criticisms of Milesian principles, but even in correcting the Milesians he built on their foundations.

Heraclitus' most fundamental departure from previous philosophy lies in his emphasis on human affairs. While he continues many of the physical and cosmological theories of his predecessors, he shifts his focus from the cosmic to the human realm. We might well think of him as the first humanist, were it not for the fact that he does not seem to like humanity very well. From the outset he makes it clear that most people are too stupid to understand his theory.  He may be most concerned with the human relevance of philosophic theories, but he is an elitist like Plato, who thinks that only select readers are capable of benefitting from his teachings. And perhaps for this reason he, like Plato, does not teach his philosophical principles directly, but couches them in a literary form that distances the author from the reader. In any case he seems to regard himself not as the author of a philosophy so much as the spokesman for an independent truth:

Having harkened not to me but to the Word (*Logos*) it is wise to agree that all things are one. (B50)

Heraclitus stresses that the message is not his own invention, but a timeless truth available to any who attend to the way the world itself is. “Although this Word is common,” he warns, “the many live as if they had a private understanding” (B2). The Word (account, message) exists apart from Heraclitus' teaching, but he tries to convey that message to his audience.

The blindness of humans is one of Heraclitus' main themes.  He announces it at the beginning of his book:

Of this Word's being forever do men prove to be uncomprehending, both before they hear and once they have heard it. For although all things happen according to this Word, they are like the unexperienced experiencing words and deeds such as I explain when I distinguish each thing according to its nature and show how it is. Other men are unaware of what they do when they are awake just as they are forgetful of what they do when they are asleep. (B1)

He begins by warning his readers that most of them will not understand his message. He promises to “distinguish each thing according to its nature and show how it is,” a claim similar to the Milesians’. Yet like sleepers his readers will not understand the world around them. As this implies, in his book Heraclitus does have some things to say about the natural world, but much more to say about the human condition.

No less important than Heraclitus' message is the form in which he imparts it to his audience. Aristotle noticed that even in the first sentence of B1, quoted above, the force of the word ‘forever’ was unclear: did it go with the preceding or the subsequent words, with ‘being’ or ‘prove’ (*Rhetoric* 1407b11–18)?  He regarded the ambiguity as a weakness in Heraclitus' communication. But if we attend to Heraclitus' language we see that syntactical ambiguity is more than an accident: it is a common technique he uses to enrich his words and to infuse them with a unique verbal complexity like that of poetry. Charles Kahn (1979: 89) identifies two general traits of Heraclitus' style, linguistic density and resonance. The former is his ability to pack multiple meanings into a single word or phrase, the latter his ability to use one expression to evoke another. To take a simple example:

moroi mezones mezonas moiras lanchanousi.

Deaths that are greater greater portions gain. (B25)

Heraclitus uses alliteration (four m-words in a row) and chiasmus (an ABBA pattern) to link death and reward. The latter appears as a mirror image of the former, and in sound and sense they fuse together. Another fragment consists of three words in Greek:

êthos anthrôpôi daimôn.

The character of man is his guardian spirit. (B119)

The second word, in the dative case “to” or “for” man, stands between the names of two very unlike objects, ‘character’ and ‘deity.’  Grammatically, it can attach to either indifferently, and seems intended to be heard with both, so that it counts twice. Because of its double role, the word forms a kind of syntactic glue between the otherwise diverse subjects, joining them together in a unity.  Traditionally having a good or a bad guardian spirit constitutes one's “luck”–one is *eudaimôn* or *dusdaimôn*, fortunate or wretched, at the mercy of one's divine overseer. But Heraclitus turns one's luck into a function of one's character, one's ethical stance, by making “man” the link.

Ultimately, Heraclitus loads his words with layers of meaning and complexities that are to be discovered in insights and solved like riddles. As he implies in the second sentence of his introduction, B1, his *logoi* are designed to be experienced, not just understood, and only those who experience them in their richness will grasp his message.

3. Philosophical Principles

Although his words are meant to provide concrete vicarious encounters with the world, Heraclitus adheres to some abstract principles which govern the world. Already in antiquity he was famous for advocating the coincidence of opposites, the flux doctrine, and his view that fire is the source and nature of all things. In commenting on Heraclitus, Plato provided an early reading, followed tentatively by Aristotle, and popular down to the present (sharpened and forcefully advocated by Barnes 1982, ch. 4). According to Barnes’ version, Heraclitus is a material monist who believes that all things are modifications of fire. Everything is in flux (in the sense that “everything is always flowing in *some* respects,” 69), which entails the coincidence of opposites (interpreted as the view that “every pair of contraries is somewhere coinstantiated; and every object coinstantiates at least one pair of contraries,” 70). The coincidence of opposites, thus interpreted, entails contradictions, which Heraclitus cannot avoid. On this view Heraclitus is influenced by the prior theory of material monism and by empirical observations that tend to support flux and the coincidence of opposites. In a time before the development of logic, Barnes concludes, Heraclitus violates the principles of logic and makes knowledge impossible.

Obviously this reading is not charitable to Heraclitus. There are, moreover, reasons to question it. First, some of Heraclitus' views are incompatible with material monism (to be discussed later), so that the background of his theories must be rethought. Second, there is evidence that Heraclitus' flux theory is weaker than that attributed to him by this reading.  Third, there is evidence that his view of the coincidence of opposites is weaker than that attributed to him here.

The standard view of Heraclitus' ontology since Aristotle is that he is a material monist who holds that fire is the ultimate reality; all things are just manifestations of fire. According to Aristotle the Milesians in general were material monists who advocated other kinds of ultimate matter: Thales water, Anaximander the boundless, Anaximenes air (*Metaphysics* 983b6–984a8). So Heraclitus' theory was just another version of a common background theory. There are problems already with Aristotle's understanding of the Milesians: Aristotle lacks any textual evidence for Thales’ view and must reconstruct it out of almost nothing; he sometimes treats Anaximander as a pluralist like Anaxagoras who thinks the boundless is a mixture of qualities; at most Anaximenes might exemplify material monism–but Plato reads him as a pluralist (*Timaeus* 39 with Graham 2003b; Graham 2003a). In the case of Heraclitus, his own statements make material monism problematic as an interpretation. According to material monism, some kind of matter is the ultimate reality, and any variation in the world consists merely of qualitative or possibly quantitative change in it; for there is only one reality, for instance fire, which can never come into existence or perish, but can only change in its appearances. Heraclitus, however, advocates a radical kind of change:

For souls it is death to become water, for water death to become earth, but from earth water is born, and from water soul. (B36)

(Here soul seems to occupy the place of fire.)  The language of birth and death in the world of living things is precisely the language used in Greek metaphysics for coming to be and perishing. It implies a radical transformation that rules out continuing identity (cf. B76, B62). Indeed, interpreters of Heraclitus cannot have it both ways: Heraclitus cannot be both a believer in radical flux (the change of everything into everything else: fire into water, water into earth, and so on) and an advocate of monism. Either he must believe in a merely illusory or at most a limited kind of change, or he must be a pluralist.

One further difficulty remains for the monist reading. In his alleged version of monism, fire is the ultimate reality. Yet fire (as the ancients recognized) is the least substantial and the most evanescent of elemental stuffs. It makes a better symbol of change than of permanence. Other alleged cases of material monism offer a basic kind of matter that could arguably be stable and permanent over long periods of time; but fire manifests “need and satiety” (B65), a kind of ongoing consumption that can live only by devouring fuel. Is not Heraclitus' choice of a basic reality itself paradoxical?  At best his appeal to fire seems to draw on material monism in a way that points beyond the theory to an account in which the process of change is more real than the material substances that undergo change….

5. Knowledge

Plato held that for Heraclitus knowledge is made impossible by the flux of sensible objects. Yet Heraclitus does not repudiate knowledge or the wisdom that comes from a proper understanding of the world. To be sure, he believes most people are not capable of wisdom; understanding is a rare and precious commodity, which even most reputed sages do not attain to (B28[a]). Yet wisdom is possible, and it is embodied in Heraclitus' message, for those who can discern it.

Heraclitus seems to accept the evidence of the senses as in some way valuable: “The things of which there is sight, hearing, experience, I prefer” (B55). Sight is the best of the senses: “The eyes are more accurate witnesses than the ears” (B101a). Yet in contrast to those who view knowledge as an accumulation of information or wisdom as a collection of sayings, he requires much more than sensation and memory:

Learning many things does not teach understanding. Else it would have taught Hesiod and Pythagoras, as well as Xenophanes and Hecataeus. (B40)

In this statement Heraclitus reviews the leading authorities of his day, living (the last three) and dead, dealing with religious and secular knowledge, and finds them all wanting. They spend too much effort in collecting information and not enough in grasping its meaning. “What intelligence or understanding do they [the people] have?” asks Heraclitus. “They follow popular bards and treat the crowd as their instructor, not realizing that the many are base, while the few are noble” (B104). He criticizes Hesiod on specifics: “The teacher of the multitude is Hesiod; they believe he has the greatest knowledge–who did not comprehend day and night: for they are one” (B57). In his myths, Hesiod treats Day and Night as separate persons, taking turns traveling abroad, while one remains at home. But this fails to capture the interconnectedness of day and night, and falsifies reality. Heraclitus criticizes Homer, Pythagoras and Archilochus for their inadequacies.

In general, he holds that people do not learn what they should: “Many do not understand such things as they encounter, nor do they learn by their experience, but they think they do” (B17). Indeed, they do not process the information they receive: “Having heard without comprehension they are like the deaf; this saying bears witness to them: present they are absent” (B34). Heraclitus explains: “Poor witnesses for men are the eyes and ears of those who have barbarian souls” (B107). A barbarian was a non-Greek; just as a foreigner hears Greek words without understanding their meaning, most people perceive without understanding the world around them. Sense perception is necessary for knowledge, but not sufficient; without the ability to decipher information from the senses, one cannot understand the world.

What chance is there then to learn the secrets of the world?  Heraclitus is not wholly pessimistic about human cognitive abilities: “All men have a share in self-knowledge and sound thinking” (B116). What is needed is not simply more sense experience or more information, but an improved way of comprehending the message (*logos*) that the world offers. In this context his curious method of expression begins to make sense. He presents his statements in the form of puzzles, riddles, aperçus.  Many of them support two or more readings, and contain hidden insights. To comprehend them the reader must grasp their complexity and then discover their unity. To read Heraclitus appropriately is to have a rich cognitive experience, as the philosopher hints in his introduction (B1).

Heraclitus often presents a simple concrete situation or image which has implications for our understanding of the world: a river, a bow, a road. He does not generally pronounce generalizations and deduce consequences. Rather, his method can be seen as inductive: he offers an example which suggests general principles. Unlike most philosophers, he challenges the right brain rather than the left.  He does not teach in the conventional sense; he offers his readers materials for understanding and lets them educate themselves. He cites with approval a model of religious instruction:

The Lord whose oracle is at Delphi neither reveals nor conceals, but gives a sign. (B93)

The riddling statements of the Delphic oracle do not provide straightforward answers, but force people to interpret them. His truths come to the attentive reader as discoveries resulting from the solution of a puzzle.

6. Value

The aim of Heraclitus' unusual approach is to produce readers who have a proper grasp of the world and their place in it.  “Sound thinking is the greatest virtue and wisdom: to speak the truth and to act on the basis of an understanding of the nature of things” (B112). Such an understanding can result only from an ability to interpret the language of nature. The proper understanding allows one to act in a harmonious way.

Heraclitus urges moderation and self-control in a somewhat conventional way (B85, B43). He also recommends the conventional Greek goal of seeking fame: “The best choose one thing above all, the everlasting fame of mortals; the many gorge themselves like cattle” (B29). To die in battle is a superior kind of death (B24). Those who drink to excess make their souls wet, and accordingly harm them (B117), for a healthy soul is dry (B118).  Those who experience better deaths attain better rewards (B25).  Those who lie will be punished (B28[b]). “For men who die there await things they do not expect or anticipate” (B27).  Some of these remarks tend to suggest an afterlife with rewards and punishment, although his belief in a continued existence is controversial (see Nussbaum 1972). In any case, Heraclitus views the soul as the moral and cognitive center of human experience.

In political theory he maintains that one good man is worth ten thousand ordinary people (B49). He criticizes his fellow citizens for banishing a distinguished leader:

The adult citizens of Ephesus should hang themselves, every one, and leave the city to children, since they have banished Hermodorus, a man pre-eminent among them, saying, Let no one stand out among us; or let him stand out elsewhere among others. (B121)

Evidently he trusts the few and distrusts the many. He sees good laws as being reflections of universal principles:

Speaking with sense we must fortify ourselves in the common sense of all, as a city is fortified by its law, and even more forcefully.  For all human laws are nourished by the one divine law. For it prevails as far as it will and suffices for all and is superabundant. (B114)

The divine law, on Heraclitus' view, is probably continuous with the laws governing the cosmos, which maintain justice through opposition (B80).

7. Influence

Although Heraclitus is not known to have had students, his writings seem to have been influential from an early time. He may have provoked Parmenides to develop a contrasting philosophy (Patin 1899; Graham 2002), although their views have much more in common than is generally recognized (Nehamas 2002). Empedocles seems to have invoked Heraclitean themes, and some Hippocratic treatises imitated Heraclitean language and presented applications of Heraclitean themes. Democritus echoed many of Heraclitus' ethical pronouncements in his own ethics. From an early time Heraclitus was seen as the representative of universal flux in contrast to Parmenides, the representative of universal stasis. Cratylus brought Heraclitus' philosophy to Athens, where Plato heard it.  Plato seems to have used Heraclitus' theory (as interpreted by Cratylus) as a model for the sensible world, as he used Parmenides’ theory for the intelligible world. As mentioned, both Plato and Aristotle viewed Heraclitus as violating the law of non-contradiction, and propounding an incoherent theory of knowledge based on a radical flux. Yet Aristotle also treated him as a coherent material monist who posited fire as an ultimate principle. The Stoics used Heraclitus' physics as the inspiration for their own, understanding him to advocate a periodic destruction of the world by fire, followed by a regeneration of the world; Cleanthes in particular commented on Heraclitus.  Aenesidemus interpreted Heraclitus as a kind of proto-skeptic (see Polito 2004).

Ever since Plato, Heraclitus has been seen as a philosopher of flux. The challenge in interpreting the philosopher of Ephesus has always been to find a coherent theory in his paradoxical utterances. Since Hegel, he has been seen as a paradigmatic process philosopher–perhaps with some justification.

**Now on to Parmenides: Parmenides never said it this way exactly, but if asked he might. He looks at what all the previous Pre-Socratics tried in order to answer the question, what explains things. He might say “If everything comes from one thing, whatever it is, it is Being – or Being exists.” The others gave that one thing a specific identity: it’s water; it’s the Apeiron, Air, “fire”, and so on. Parmenides’ genius is that he says something like “let’s not bicker over what kind of thing it is ultimately, let’s just acknowledge it is exists: Being is.”**

**As soon as he has his primary claim *Being Is*, he knows that logically *non-Being* (its logical opposite) *is not. Being is, non-Being is not.* Perfect. Then he asks, if the aforementioned is true, what else logically follows? Being can only be one thing. If there were two things, then one is Being, and the other is non-Being; but non-Being is not (meaning that it doesn’t exist) so there is only Being. Since there is only Being it can’t go anywhere where it is not. So it is immobile. Parmenides’s conclusion lacks something like the void being the place in which Being can move. {The atomists, like Democritus, are another branch of Pre-Socratic philosophers who suppose that there are tiny indivisible building blocks, he names Atoms, from the Greek meaning “not, to cut” which move in the *void*. There they collide with other atoms and result in objects we see.}**

**Being can’t *come into* Being, since if Being didn’t exist, the only place it could come from would be non-Being, which doesn’t exist. Logically he concludes that Being is eternal and unchanging. {Plato absolutely loves this! It’s like Plato’s idea, of the *Form* of the eternal triangle. Triangularity always exists whether or not any humans is there to notice it.}**

**This means that while it’s true that our senses say the world changes (our common sense), Parmenides says that is merely how it *appears.* In truth, *Reality* is one thing; it’s Being: it’s fixed, unchanging and immobile. Then he notes that our senses show us the *many* things, the changing world. Our minds can understand how they are related, however, the mind knows that the many things are merely copies of the pure, unchanging idea. {Plato loves this too. Plato uses this basic idea, and makes it explain things more clearly. Below is more detail on Parmenides for those with any interest.}**

**“**Parmenides of Elea, active in the earlier part of the 5th c. BCE, authored a difficult metaphysical poem that has earned him a reputation as early Greek philosophy’s most profound and challenging thinker. His philosophical stance has typically been understood as at once extremely paradoxical and yet crucial for the broader development of Greek natural philosophy and metaphysics. He has been seen as a metaphysical monist (of one stripe or another) who so challenged the naïve cosmological theories of his predecessors that his major successors among the Pre-Socratics were all driven to develop more sophisticated physical theories in response to his arguments.

###  The Proem

Parmenides’ poem began with a proem describing a journey he figuratively once made to the abode of a goddess. He described how he was conveyed on “the far-fabled path of the divinity” (fr. 1.3) in a chariot by a team of mares and how the maiden daughters of Helios, the sun-god, led the way. These maidens take Parmenides to whence they themselves have come, to “the halls of Night” (fr. 1.9), before which stand “the gates of the paths of night and day” (fr. 1.11). The maidens gently persuade Justice, guardian of these gates, to open them so that Parmenides himself may pass through to the abode within. Parmenides thus describes how the goddess who dwells there welcomed him upon his arrival:

And the goddess received me kindly, and in her hand she took/ my right hand, and she spoke and addressed me thus:/ “O young man, accompanied by immortal charioteers/ and mares who bear you as you arrive at our abode,/ welcome, since a fate by no means ill sent you ahead to travel/ this way (for surely it is far from the track of humans),/ but Right and Justice.” (Fr. 1.22–28a)

Parmenides’ proem is no epistemological allegory of enlightenment but a topographically specific description of a mystical journey to the halls of Night. In Hesiod, the “horrible dwelling of dark Night” (Th. 744) is where the goddesses Night and Day alternately reside as the other traverses the sky above the Earth. Both Parmenides’ and Hesiod’s conception of this place have their precedent in the Babylonian mythology of the sun god’s abode. This abode also traditionally served as a place of judgment, and this fact tends to confirm that when Parmenides’ goddess tells him that no ill fate has sent him ahead to this place (fr. 1.26–27a), she is indicating that he has miraculously reached the place to which travel the souls of the dead.

In the proem, then, Parmenides casts himself in the role of an initiate into the kind of mysteries that were during his day part of the religious milieu of Magna Graecia. The motif of the initiate is important, for it informs Parmenides’ portrayal of himself as one whose encounter with a major divinity has yielded a special knowledge or wisdom. The divinity in this instance would seem to be Night herself: Parmenides goes to “the halls of Night” (fr. 1.9), and the goddess who greets him welcomes him to “our home” (fr. 1.25). The goddess Night serves as counselor to Zeus in some of the major Orphic cosmologies, including the Derveni cosmology. In the closely related Orphic Rhapsodies, Night instructs Zeus on how to preserve the unity produced by his absorption of all things into himself as he sets about initiating a new cosmogonic phase. It is thus appropriate that Night should be the source of Parmenides’ revelation, for Parmenidean metaphysics is very much concerned with the principle of unity in the cosmos.

### 2.2 The Ways of Inquiry

Immediately after welcoming Parmenides to her abode, the goddess describes as follows the content of the revelation he is about to receive:

You must needs learn all things,/ both the unshaken heart of well-rounded reality/ and the notions of mortals, in which there is no genuine trustworthiness./ Nonetheless these things too will you learn, how what they resolved/ had actually to be, all through all pervading. (Fr. 1.28b-32)

This programmatic announcement already indicates that the goddess’ revelation will come in two major phases. The goddess provides some further instruction and admonition before commencing the first phase, the demonstration of the nature of what she here mysteriously calls “the unshaken heart of well-rounded reality” (fr. 1.29). She then follows this first phase of her revelation with what in the originally complete poem was a much longer account of the principles, origins, and operation of the cosmos and its constituents, from the heavens and the sun, moon, and stars right down to the earth and its population of living creatures, including humans themselves. This second phase, a cosmological account in the traditional Presocratic mold, is what she here refers to as “the notions of mortals, in which there is no genuine trustworthiness” (fr. 1.30).

The governing motif of the goddess’ revelation is that of the “ways of inquiry.” In the all-important fragment 2, she specifies two such ways:

Come now, I shall tell—and convey home the tale once you have heard—/just which ways of inquiry alone there are for understanding:/ the one, that [it] is and that [it] is not not to be,/ is the path of conviction, for it attends upon true reality,/ but the other, that [it] is not and that [it] must not be,/ this, I tell you, is a path wholly without report:/ for neither could you apprehend what is not, for it is not to be accomplished,/ nor could you indicate it. (Fr. 2)

The second way of inquiry is here set aside virtually as soon as it is introduced. The goddess goes on to refer back to the first way of inquiry and then speaks of another way as characteristic of mortal inquiry:

It is necessary to say and to think that What Is is; for it is to be,/ but nothing it is not. These things I bid you ponder./ For I shall begin for you from this first way of inquiry,/ then yet again from that along which mortals who know nothing/ wander two-headed: for haplessness in their/ breasts directs wandering understanding. They are borne along/ deaf and blind at once, bedazzled, undiscriminating hordes,/ who have supposed that it is and is not the same/ and not the same; but the path of all these turns back on itself. (Fr. 6, supplementing the lacuna at the end of verse 3 with arxô and taking s’ earlier in the verse as an elision of soi, as per Nehamas 1981, 103–5; cf. the similar proposal at Cordero 1984, ch. 3, expanding parts of Cordero 1979.)

Here the goddess again articulates the division of her revelation into the two major phases first announced at the end of fragment 1. Compare her subsequent pronouncement at the point of transition from the first phase’s account of reality to the second phase’s cosmology: “At this point I cease for you the trustworthy account and meditation/ regarding true reality; from this point on mortal notions/ learn, listening to the deceptive order of my verses” (fr. 8.50–2).

Clearly, the goddess’ account of “true reality” proceeds along the first way of inquiry introduced in fragment 2. Some have thought the cosmology proceeds along the second way of inquiry introduced at fr. 2.5, on the ground that the two ways introduced in fragment 2 appear to be presented as the only conceivable ways of inquiry. However, the way presented in fragment 6, as that along which wanders the thought of mortals “who have supposed that it is and is not the same and not the same” (fr. 6.7–8a), involves an intermingling of being and not-being altogether different from what one sees in the way of inquiry earlier specified as “that [it] is not and that [it] must not be” (fr. 2.5). Fragment 6 thus appears to be introducing a third and different way, one not to be identified with fragment 2’s second way, which has already been set aside. The same mixture of being and non-being likewise features in the goddess’ warning to Parmenides in fragment 7 not to allow his thought to proceed along the way typical of mortal inquiries: “…for this may never be made manageable, that things that are not are./ But you from this way of inquiry restrain your understanding,/ and do not let habit born of much experience force you along this way,/ to employ aimless sight and echoing hearing/ and tongue. But judge by reason the strife-filled critique/ I have delivered” (fr. 7). Some have thought that here the goddess’s last directive signals that some argument, with identifiable premises and conclusion, has been presented in the preceding verses. She in fact appears to be indicating that her harsh criticism of the inapprehension of ordinary humans, resulting from their exclusive reliance on the senses, has been designed to keep Parmenides firmly planted on the first way of inquiry.

### 2.3 The Way of Conviction

The goddess begins her account of “true reality,” or what is to be discovered along this first path, as follows: “As yet a single tale of a way/ remains, that it is; and along this path markers are there/ very many, that What Is is ungenerated and deathless,/ whole and uniform, and still and perfect” (fr. 8.1–4). What Is (to eon) has by this point become a name for what Parmenides will form a fuller conception of by following the goddess’ directions. These now include the programmatic description here in fr. 8.3–4 of the attributes What Is will be shown to have in the ensuing arguments. Thanks primarily to Simplicius’ transcription, we still possess in its entirety the portion of Parmenides’ poem comprising the goddess’s revelation of the nature of “true reality.” This account constitutes one of the philosophical tradition’s earliest, most extensive, and most important stretches of metaphysical reasoning.

The arguments here proceed methodically in accordance with the program announced at fr. 8.3–4. The goddess begins by arguing, in fr. 8.5–21, that What Is must be “ungenerated and deathless”:

but not ever was it, nor yet will it be, since it is now together entire,/ single, continuous; for what birth will you seek of it?/ How, whence increased? From not being I shall not allow/ you to say or to think: for not to be said and not to be thought/ is it that it is not. And indeed what need could have aroused it/ later rather than before, beginning from nothing, to grow?/ Thus it must either be altogether or not at all./ Nor ever from not being will the force of conviction allow/ something to come to be beyond it: on account of this neither to be born/ nor to die has Justice allowed it, having loosed its bonds,/ but she holds it fast. And the decision about these matter lies in this:/ it is or it is not; but it has in fact been decided, just as is necessary,/ to leave the one unthought and nameless (for no true/ way is it), and <it has been decided> that the one that it is indeed is genuine./ And how could What Is be hereafter? And how might it have been?/ For if it was, it is not, nor if ever it is going to be:/ thus generation is extinguished and destruction unheard of.

Fr. 8.5–6a, at the outset here, have often been taken as a declaration that What Is has some type of timeless existence. Given, however, that this verse and a half opens a chain of continuous argumentation, claiming that What Is does not come to be or pass away, these words are probably better understood as a declaration of What Is’s uninterrupted existence.

Continuing on, in fr. 8.22–5 the goddess presents a much briefer argument for What Is’s being “whole and uniform”: “Nor is it divided, since it is all alike;/ and it is not any more there, which would keep it from holding together,/ nor any worse, but it is all replete with What Is./ Therefore it is all continuous: for What Is draws to What Is.” Then, at fr. 8.26–33, she argues that it is “still” or motionless:

And unmoved within the limits of great bonds/ it is unbeginning unending, since generation and destruction/ have wandered quite far away, and genuine conviction has expelled them./ And remaining the same, in the same place, and on its own it rests,/ and thus steadfast right there it remains; for powerful Necessity/ holds it in the bonds of a limit, which encloses it all around,/ wherefore it is right that What Is be not unfulfilled; for it is not lacking: if it were, it would lack everything.

Finally, at fr. 8.42–9 (which Ebert 1989 has shown originally followed immediately after fr. 8.33, verses 34–41 having suffered transposition from their original position following verse 52), the goddess concludes by arguing that What Is must be “perfect,” before transitioning to the second phase of her revelation:

But since there is a furthest limit, it is perfected/ from every side, like the bulk of a well-rounded globe,/ from the middle equal every way: for that it be neither any greater/ nor any smaller in this place or in that is necessary;/ for neither is there non-being, which would stop it reaching/ to its like, nor is What Is such that it might be more than What Is/ here and less there. Since it is all inviolate,/ for it is equal to itself from every side, it extends uniformly in limits.

### 2.4 The Way of Mortals

We have decidedly less complete evidence for the revelation’s second phase, Parmenides’ cosmology. The direct evidence provided by the last lines of fragment 8 (50–64) and by the other fragments plausibly assigned to this portion of the poem (frs. 9 through 19) originally accounted for perhaps only ten percent of the cosmology’s original length. Since a number of these fragments are programmatic, we still have a good idea of some of the major subjects it treated. From the end of fragments 8 and fragments 9 through 15a we know that these included accounts of the cosmos’ two basic principles, light and night, and then of the origin, nature, and behavior of the heavens and their inhabitants, including the stars, sun, moon, the Milky Way, and the earth itself. Witness the programmatic remarks of fragments 10 and 11:

You will know the aether’s nature, and in the aether all the/ signs, and the unseen works of the pure torch/ of the brilliant sun, and from whence they came to be,/ and you will learn the wandering works of the round-eyed moon/ and its nature, and you will know too the surrounding heaven,/ both whence it grew and how Necessity directing it bound it/ to furnish the limits of the stars. (Fr. 10)

…how the earth and sun and moon/ and the shared aether and the heavenly milk and Olympos/ outermost and the hot might of the stars began/ to come to be. (Fr. 11)

A few fragments, including one known only via Latin translation, show that Parmenides also dealt with the physiology of reproduction (frs. 17–18) and with human thought (fr. 16). Fortunately, the sketchy picture of the cosmology furnished by the fragments is significantly improved by the testimonia. The impression given by the fragments of the range of subjects is confirmed by both Simplicius, who comments after quoting fr. 11 that Parmenides’ account of the genesis of things extended down to the parts of animals (Simp. in Cael. 559.26–7), and likewise by Plutarch’s judgment that Parmenides’ cosmology has so much to say about the earth, heaven, sun, moon, and stars, right down to the genesis of human beings, that it omits none of the major subjects typically treated by ancient natural philosophers (Plu. Col. 1114B-C). A particularly important testimonium in the doxographer Aëtius paraphrases, explicates, and supplements fr. 12 in ways that give us a better picture of the structure of Parmenides’ cosmos (Aët. 2.7.1 = 28A37a Diels-Kranz). Likewise, Theophrastus’ comments on fragment 16 at De Sensibus 1–4 appear to provide more information about Parmenides’ views on cognition. The ancient testimonia tend to confirm that Parmenides sought to explain an incredibly wide range of natural phenomena, including especially the origins and specific behaviors of both the heavenly bodies and the terrestrial population. One fundamental problem for developing a coherent view of Parmenides’ philosophical achievement has been how to understand the relation between the two major phases of the goddess’ revelation.

## 3. Some Principal Types of Interpretation

While Parmenides is generally recognized as having played a major role in the development of ancient Greek natural philosophy and metaphysics, fundamental disagreement persists about the upshot of his philosophy and thus about the precise nature of his influence. Sections 3.1 through 3.3 of what follows describe in brief outline the types of interpretation that have played the most prominent roles in the development of broader narratives for the history of early Greek philosophy. These sections do not purport to present a comprehensive taxonomy of modern interpretations, nor do they make any attempt to reference all the representatives and variants of the principal types of interpretation here described. They are not meant to be a history of modern Parmenides interpretation, as worthy and fascinating a topic as that is. Since some advocates of the interpretations outlined in sections 3.1 to 3.3 have claimed to find ancient authority for their views via selective appeal to certain facets of the ancient Parmenides reception, it will also be worthwhile indicating what was in fact the prevailing view of Parmenides in antiquity. After doing so in section 3.4, the final section of this article will outline a type of interpretation that takes the prevailing ancient view more seriously while responding to at least one major problem it encounters in the fragments.

If one wishes to adjudicate among the various types of interpretation, one may start by recognizing some of the requirements upon a successful interpretation, or an interpretation offering a historically plausible account of Parmenides’ thought in its place and time. A successful interpretation must take account of advances in the understanding of the text and transmission of the fragments of Parmenides’ poem, such as Theodor Ebert’s identification of a transposition in fr. 8 (Ebert 1989) and the results of Leonardo Tarán’s reexamination of the manuscripts of Simplicius’s commentary on Aristotle’s Physics (Tarán 1987). A successful interpretation should attend to the fr. 1 proem’s indications of the poem’s cultural context. It should attend to the poem’s epistemology as well as to its logical and metaphysical dimensions. Perhaps most importantly, it should take full and proper account of Parmenides’ cosmology (and not try to explain it away or else simply ignore it). Attention in recent years to some of the most innovative features of the cosmology have confirmed what should have been evident in any case, namely, that the cosmology that originally comprised the greater part of his poem is Parmenides’ own explanation of the world’s origins and operation (see especially Mourelatos 2013, Graham 2013, and Mansfeld 2015). A successful interpretation must explain the relation between the two major phases of the goddess’s revelation so that the existence of what is described in one is compatible with the existence of what is described in the other. To this end, it should avoid attributing to Parmenides views that are patently anachronistic or, worse, views that cannot be coherently asserted or maintained. A successful interpretation also needs to attend carefully to the structure of Parmenides’ argumentation in the path of conviction and to follow it through to the end without lapsing into understanding his claims that what is is "ungenerated and deathless,/ whole and uniform, and still and perfect" (fr. 8.3-4) as mere metaphors.

### 3.1 The Strict Monist Interpretation

A good many interpreters have taken the poem’s first major phase as an argument for strict monism, or the paradoxical view that there exists exactly one thing, and for this lone entity’s being totally unchanging and undifferentiated. On this view, Parmenides considers the world of our ordinary experience non-existent and our normal beliefs in the existence of change, plurality, and even, it seems, our own selves to be entirely deceptive. Although less common than it once was, this type of view still has its adherents and is probably familiar to many who have only a superficial acquaintance with Parmenides.

The strict monist interpretation is influentially represented in the first two volumes of W. K. C. Guthrie’s A History of Greek Philosophy, where it is accorded a critical role in the development of early Greek natural philosophy from the purported material monism of the early Milesians to the pluralist physical theories of Empedocles, Anaxagoras, and the early atomists, Leucippus and Democritus. On Guthrie’s strict monist reading, Parmenides’ deduction of the nature of reality led him to conclude “that reality [is], and must be, a unity in the strictest sense and that any change in it [is] impossible” and therefore that “the world as perceived by the senses is unreal” (Guthrie 1965, 4–5). Finding reason and sensation to yield wildly contradictory views of reality, Parmenides presumed reason must be preferred and sensory evidence thereby rejected as altogether deceptive. His strict monism, on Guthrie’s view, took particular aim at the monistic material principles of Milesian cosmology:

[Parmenides] argues with devastating precision that once one has said that something is, one is debarred from saying that it was or will be, of attributing to it an origin or a dissolution in time, or any alteration or motion whatsoever. But this was just what the Milesians had done. They supposed that the world had not always existed in its present cosmic state. They derived it from one substance, which they asserted to have changed or moved in various ways—becoming hotter or colder, drier or wetter, rarer or denser—in order to produce the present world-order. (Guthrie 1965, 15-16)

A particular focus of Parmenides’ criticism, on this view, was Anaximander’s idea that the opposites are initially latent within the originative principle he called “the Boundless” (to apeiron) prior to being separated out from it: if these opposite characteristics existed prior to being separated out, then the Boundless was not a true unity, but if they did not exist prior to being separated out, then how could they possibly come into existence? It is thus illegitimate to suppose that everything came into being out of one thing (Guthrie 1962, 86–7). In addition to thus criticizing the theoretical viability of the monistic material principles of the early Milesian cosmologists, Parmenides also is supposed to have criticized the Milesian union of the material and moving cause in their principles by arguing that motion and change are impossible and inadmissible conceptions (Guthrie 1965, 5–6, 52).

As we have seen, Parmenides’ insistence on the point that whatever is, is, and cannot ever not be leads him to be harshly critical of the ordinary run of mortals who rely on their senses in supposing that things are generated and undergo all manner of changes. Parmenides directs us to judge reality by reason and not to trust the senses. Reason, as deployed in the intricate, multi-staged deduction of fragment 8, reveals what attributes whatever is must possess: whatever is must be ungenerated and imperishable; one, continuous and indivisible; and motionless and altogether unchanging, such that past and future are meaningless for it. This is “all that can be said about what truly exists,” and reality is thus revealed as “something utterly different from the world in which each one of us supposes himself to live,” a world which is nothing but a “deceitful show” (Guthrie 1965, 51). Parmenides nonetheless proceeded in the second part of his poem to present an elaborate cosmology along traditional lines, thus presenting readers with the following crux: “Why should Parmenides take the trouble to narrate a detailed cosmogony when he has already proved that opposites cannot exist and there can be no cosmogony because plurality and change are inadmissible conceptions?” (Guthrie 1965, 5). Guthrie suggests that Parmenides is “doing his best for the sensible world…by giving as coherent an account of it as he can,” on the practical ground that our senses continue to deceive us about its existence: “His account of appearances will excel those of others. To ask ‘But if it is unreal, what is the point of trying to give an account of it at all?’ is to put a question that is not likely to have occurred to him” (Guthrie 1965, 5 and 52).

### 3.2 The Logical-Dialectical Interpretation

One problem with Guthrie’s view of Parmenides is that the supposition that Parmenides’ strict monism was developed as a critical reductio of Milesian material monism sits uncomfortably with the notion that he actually embraced this wildly counter-intuitive metaphysical position. There is the same type of tension in the outmoded proposals that Parmenides was targeting certain supposedly Pythagorean doctrines (a view developed in Raven 1948 and ensconced in Kirk and Raven 1957). Even as Guthrie was writing the first two volumes of his History, a shift was underway toward understanding Parmenides’ arguments as driven by strictly logical considerations rather than by any critical agenda with respect to the theories of his Ionian or Pythagorean predecessors. Here the watershed event was the publication of G. E. L. Owen’s “Eleatic Questions” (Owen 1960). Owen found inspiration in Bertrand Russell for his positive interpretation of Parmenides’ argument in fragment 2, the essential point of which Owen took to be that what can be talked or thought about exists.

Russell’s treatment of Parmenides in his A History of Western Philosophy was conditioned by his own abiding concern with the problems of analysis posed by negative existential statements. The essence of Parmenides’ argument, according to Russell, is as follows:

When you think, you think of something; when you use a name, it must be the name of something. Therefore both thought and language require objects outside themselves. And since you can think of a thing or speak of it at one time as well as another, whatever can be thought of or spoken of must exist at all times. Consequently there can be no change, since change consists in things coming into being or ceasing to be (Russell 1945, 49).

Here the unargued identification of the subject of Parmenides’ discourse as “whatever can be thought of or spoken of” prefigures Owen’s identification of it as “whatever can be thought and talked about,” with both proposals deriving from fr. 2.7–8. There follows in Russell’s History an exposition of the problems involved in speaking meaningfully about (currently) non-existent subjects, such as George Washington or Hamlet, after which Russell restates the first stage of Parmenides’ argument as follows: “if a word can be used significantly it must mean something, not nothing, and therefore what the word means must in some sense exist” (Russell 1945, 50). So influential has Russell’s understanding been, thanks in no small part to Owen’s careful development of it, that it is not uncommon for the problem of negative existential statements to be referred to as “Parmenides’ paradox.”

The arguments of fragment 8, on this view, are then understood as showing that what can be thought and talked about is, surprisingly, without variation in time and space, that is, absolutely one and unchanging. Owen adapted an image from Wittgenstein in characterizing these arguments, ones which “can only show the vacuousness of temporal and spatial distinctions by a proof which employs them,” as “a ladder which must be thrown away when one has climbed it” (Owen 1960, 67). Owen also vigorously opposed the assumption that “Parmenides wrote his poem in the broad tradition of Ionian and Italian cosmology,” arguing that Parmenides claims no measure of truth or reliability for the cosmogony in the latter part of his poem and that his own arguments in the “Truth” (i.e., the “Way of Conviction”) neither derive from this earlier tradition nor depict the cosmos as spherical in shape (Owen 1960, 48). On Owen’s reading, not so very differently from Guthrie’s, Parmenides’ cosmology is “no more than a dialectical device,” that is, “the correct or the most plausible analysis of those presuppositions on which ordinary men, and not just theorists, seem to build their picture of the physical world,” these being “the existence of at least two irreducibly different things in a constant process of interaction,” whereas Parmenides’ own arguments have by this point shown both the plurality and change this picture presupposes to be unacceptable (Owen 1960, 50 and 54–5).

Owen’s view of Parmenidean metaphysics as driven by primarily logical concerns and of his cosmology as no more than a dialectical device would have a deep influence on two of the most important surveys of Presocratic thought since Guthrie—Jonathan Barnes’s The Presocratic Philosophers (19791, 19822) and Kirk, Raven, and Schofield’s The Presocratic Philosophers (19832). While abandoning the idea that Parmenidean monism was a specific reaction to the theories of any of his predecessors, these two works continue to depict his impact on later Presocratic systems as decisive. On their Owenian line, the story becomes that the arguments of Parmenides and his Eleatic successors were meant to be generally destructive of all previous cosmological theorizing, in so far as they purported to show that the existence of change, time, and plurality cannot be naively presumed. Parmenides’ arguments in fragment 8 effectively become, for advocates of this line, a generalized rather than a specific reductio of early Greek cosmological theorizing. Barnes, furthermore, responded to an objection that had been raised against Owen’s identification of Parmenides’ subject as whatever can be talked and thought about—namely, that this identification derives from the reason given at fr. 2.7–8 for rejecting the second path of inquiry, whereas an audience could not be expected to understand this to be the goddess’ subject when she introduces the first two ways of inquiry in fr. 2.3 and 2.5. Barnes modified Owen’s identification of Parmenides’ subject so that it might be found in the immediate context, specifically in the implicit object of fr. 2.2’s description of the paths as “ways of inquiry”; thus, according to Barnes, the first path “says that whatever we inquire into exists, and cannot not exist” (Barnes 1982, 163). Barnes’s modified Owenian line has since been endorsed by prominent interpreters (including Schofield in Kirk, Raven, and Schofield 1983, 245; cf. Brown 1994, 217). Barnes also advanced the more heterodox proposal that Parmenides was not necessarily a monist at all, arguing that the fragments are compatible with the existence of a plurality of “Parmenidean Beings” (Barnes 1979, cf. Untersteiner 1955). While this proposal has had fewer adherents among other interpreters favoring the Russell-Owen line, it has been taken up by certain advocates of the next type of interpretation.

### 3.3 The Meta-Principle Interpretation

One influential alternative to interpretations of Parmenides as a strict monist, certainly among scholars working in America, has been that developed by Alexander Mourelatos in his 1970 monograph, The Route of Parmenides. (See Mourelatos 1979 for a succinct presentation of this alternative in response to perceived shortcomings in Owen’s logical-dialectical reading.) Mourelatos saw Parmenides as utilizing a specialized, predicative sense of the verb “to be” in speaking of “what is”, a sense used to reveal a thing’s nature or essence. This sense of the verb, dubbed by Mourelatos “the ‘is’ of speculative predication,” is supposed to feature in statements of the form, “X is Y,” where the predicate “belongs essentially to, or is a necessary condition for, the subject” and thus gives X’s reality, essence, nature, or true constitution (Mourelatos 1970, 56–60). Alexander Nehamas would likewise propose that Parmenides employs “is” in the very strong sense of “is what it is to be,” so that his concern is with “things which are F in the strong sense of being what it is to be F” (Nehamas 1981, 107; although Nehamas cites Owen as well as Mourelatos as an influence, Owen himself took Parmenides’ use of the verb “to be” in “what is” as existential [see Owen 1960, 94]). On the resulting type of interpretation, the first major phase of Parmenides’ poem provides a higher-order account of what the fundamental entities of any ontology would have to be like: they would have to be F, for some F, in this specially strong way. As such, it is not an account of what there is (namely, one thing, the only one that exists) but, rather, of whatever is in the manner required to be an ontologically fundamental entity—a thing that is F, for some F, in an essential way. Thus Nehamas has more recently written:

the “signposts” along the way of Being which Parmenides describes in B 8 [may be taken] as adverbs that characterize a particular and very restrictive way of being. The signposts then tell us what conditions must be met if a subject is to be something in the appropriate way, if it is to be really something, and thus be a real subject. And to be really something, F, is to be F—B 8 tells us—ungenerably and imperishably, wholly, only and indivisibly, unchangingly, perfectly and completely. … Parmenides uses “being” to express a very strong notion, which Aristotle eventually was to capture with his concept of “what it is to be.” To say of something that it is F is to say that F constitutes its nature (Nehamas 2002, 50).

A variant of the meta-principle interpretation, one that also draws upon Barnes’s suggestion that nothing in the “Truth” precludes there being a plurality of Parmenidean Beings, has been developed by Patricia Curd. On her view, Parmenides was not a strict monist but, rather, a proponent of what she terms “predicational monism,” which she defines as “the claim that each thing that is can be only one thing; it can hold only the one predicate that indicates what it is, and must hold it in a particularly strong way. To be a genuine entity, a thing must be a predicational unity, with a single account of what it is; but it need not be the case that there exists only one such thing. Rather, the thing itself must be a unified whole. If it is, say, F, it must be all, only, and completely F. On predicational monism, a numerical plurality of such one-beings (as we might call them) is possible” (Curd 1998, 66).

Mourelatos, Nehamas, and Curd all take Parmenides to be concerned with specifying in an abstract way what it is to be the nature or essence of a thing, rather than simply with specifying what there in fact is, as he is presumed to be doing on both the logical-dialectical and the more traditional strict monist readings. Since the meta-principle reading takes Parmenides’ major argument in fragment 8 to be programmatic instead of merely paradoxical or destructive, it suggests a somewhat different narrative structure for the history early Greek philosophy, one where the so-called “post-Parmenidean pluralists”—Empedocles, Anaxagoras, and the early atomists, Leucippus and Democritus—were not reacting against Parmenides, but were actually endorsing his requirements that what really is be ungenerated, imperishable, and absolutely changeless, when they conceived of the principles of their respective physical systems in these terms. The meta-principle reading has also seemed to re-open the possibility that Parmenides was engaged in critical reflection upon the principles of his predecessors’ physical systems.

If the first phase of Parmenides’ poem provides a higher-order description of the features that must belong to any proper physical principle, then one would naturally expect the ensuing cosmology to deploy principles that meet Parmenides’ own requirements. The goddess describes the cosmology, however, as an account of “the beliefs of mortals, in which there is no genuine conviction” (fr. 1.30, cf. fr. 8.50–2) and commences this part of her revelation by describing how mortals have wandered astray by picking out two forms, light and night, to serve as the basis for an account of the cosmos’ origin and operation (fr. 8.53–9). Advocates of the meta-principle reading here face a dilemma. On the one hand, they cannot plausibly maintain that the cosmology is what their overall interpretation would lead one to expect, namely, Parmenides’ effort at developing a cosmology in accordance with his own strictures upon what the principles of such an account must be like. The cosmological principles light and night do not in fact conform to those strictures. But then why should Parmenides have bothered to present a fundamentally flawed or “near-correct” cosmology, founded upon principles that fail to satisfy the very requirements he himself has supposedly specified? If one falls back on the position that the cosmology in the poem is not Parmenides’ own (which remains implausible given the cosmology’s innovations), then it becomes even more puzzling why he should have described what the principles of an adequate cosmology must be like and then failed to try to present one.

The presence of the cosmology in Parmenides’ poem continues to be problematic for advocates of the meta-principle interpretation. just as it is for advocates of the other major types of interpretation discussed thus far. Guthrie views the cosmology as Parmenides’ best attempt at giving an account of the sensible world, given that we will continue to be deceived into thinking it exists despite his arguments to the contrary. Not only is this an unstable interpretive position, it imputes confusion to Parmenides rather than acknowledge its own difficulties. It is hardly more satisfying to be told by Owen that Parmenides’ cosmology has a purpose that is “wholly dialectical” (Owen 1960, 54–5; cf. Long 1963 for a more detailed development of this interpretive line).

Although they repeat the essentials of Owen’s view, Kirk, Raven, and Schofield finally acknowledge that the presence of the elaborate cosmology remains problematic for this line of interpretation: “Why [the cosmology] was included in the poem remains a mystery: the goddess seeks to save the phenomena so far as is possible, but she knows and tells us that the project is impossible” (Kirk, Raven, and Schofield 1983, 262, after echoing Owen’s line on the cosmology’s dialectical character at 254–6). While the meta–principle interpretation raises the expectation, which fails to be met, that the principles of Parmenides’ cosmology will conform to the requirements he has supposedly specified earlier in the poem, the strict monist and logical-dialectical interpretations leave even some of their own advocates wondering why Parmenides devoted the bulk of his poem to an account of things his own reasoning is supposed to have shown do not exist.

### 3.4 The Aspectual Interpretation Prevailing in Antiquity

The idea that Parmenides’ arguments so problematized the phenomenon of change as to make developing an adequate theoretical account of it the central preoccupation of subsequent Presocratic natural philosophers is a commonplace of modern historical narratives. Unfortunately, this notion has no real ancient authority. Aristotle’s account at Physics 1.8.191a23–33 of the wrong turn he claims earlier natural philosophers took in trying to understand the principles of change has often been thought to legitimate this view, given the Eleatic-sounding argument it records. But Aristotle mentions Parmenides nowhere in the passage, and his complaint is in fact broadly directed against all the early Greek philosophers whose views he has been surveying previously in the book. He complains that they naively adopted the view that no fundamental entity or substance comes to be or perishes, the result being that they are unable to account for, because they disavow, substantial change, which is the very phenomenon Aristotle is most interested in explaining. Aristotle actually understands Parmenides’ thesis that what is is one (hen to on) and not subject to generation and change as belonging, not to natural philosophy, but to first philosophy or metaphysics (Cael. 3.1.298b14–24; cf. Metaph. 1.5.986b14–18, Ph. 1.2.184a25-b12).

In the complex treatment of Parmenides in Physics 1.2–3, Aristotle introduces Parmenides together with Melissus as representing the position, within the Gorgianic doxographical schema structuring his own examination of earlier archê-theories, that there is a single and unchanging archê or principle (Ph. 1.2.184b15–16). Aristotle recognizes, however, that this grouping obscures very real differences between the two thinkers’ views. According to Aristotle, Melissus held that everything is a single, i.e. continuous or indivisible, and unlimited quantity (or extension). Parmenides, on Aristotle’s reconstruction, recognized only a use of “being” indicating what something is in respect of its substance or essence; he accordingly supposed that everything that is is substance, and he supposed everything to be one in the sense that the account of the essence of everything is identical. Furthermore, on Aristotle’s view of Parmenides, whatever might differentiate what is cannot do so with respect to its essence but only accidentally. But no accident of what just is can belong to its essence, and since Parmenides admits only a use of “being” indicating what something is in respect of its substance or essence, no differentiating accident of what is can be said to be. Such is the thrust of Aristotle’s reconstruction of Parmenides’ reasoning at Physics 1.3.186a34-b4 and, likewise, of his summary allusion to this passage at Metaphysics 1.5.986b28–31.

The only point where Aristotle’s representation of Parmenides in Metaphysics 1.5 appears to differ from the major treatment in Physics 1.2–3 is in following up this summary with the qualification that, being compelled to go with the phenomena, and supposing that what is is one with respect to the account (sc. of its essence) but plural with respect to perception, he posited a duality of principles as the basis for his account of the phenomena (986b27–34, reading to on hen men at 986b31, as per Alexander of Aphrodisias’s paraphrase). This is only a superficial difference, given how at Physics 1.5.188a19–22 Aristotle points to the Parmenidean duality of principles to support his thesis that all his predecessors had made the opposites principles, including those who maintained that everything is one and unchanging. Nonetheless, the representation of Parmenides’ position in Metaphysics 1.5, according to which what is is one with respect to the account of its essence but plural with respect to perception, is more indulgent than the reconstruction of Parmenides’ reasoning in Physics 1.3 in that it allows for a differentiated aspect of what is. By allowing that what is may be differentiated with respect to its phenomenal qualities, Aristotle seems to have recognized at some level the mistake in assuming that Parmenides’ failure to distinguish explicitly among the senses of “being” entails that he could only have employed the term in one sense.

Despite the assimilation of Melissus and Parmenides under the rubric inherited from Gorgias, Aristotle recognized that grouping the two figures together under this convenient label obscured fundamental differences in their positions. The fact is that “monism” does not denote a unique metaphysical position but a family of positions. Among its species are strict monism or the position that just one thing exists. This is the position Melissus advocated, one which no serious metaphysician should want to adopt. More familiar species include both numerical and generic substance monism, according to which, respectively, there is a single substance or a single kind of substance. Aristotle seems ultimately to have inclined toward attributing this first type of “generous” monism to Parmenides. In viewing Parmenides as a generous monist, whose position allowed for the existence of other entities, rather than as a “strict” monist holding that only one thing exists, Aristotle is in accord with the majority view of Parmenides in antiquity.

That some in antiquity viewed Parmenides as a strict monist is evident from Plutarch’s report of the Epicurean Colotes’ treatment of Parmenides in his treatise, That One Cannot Live According to the Doctrines of Other Philosophers. Colotes’ main claim appears to have been that Parmenides prevents us from living by maintaining that “the universe is one” (hen to pan), a tag which Colotes apparently took to mean that Parmenides denied the existence of fire and water and, indeed, “the inhabited cities in Europe and Asia”; he may also have claimed that if one accepts Parmenides’ thesis, there will be nothing to prevent one from walking off a precipice, since on his view there are no such things (Plut. Col. 1114B). In short, as Plutarch reports, Colotes said that “Parmenides abolishes everything by hypothesizing that being is one” (1114D). Plutarch himself, however, takes strong issue with Colotes’ view, charging him with imputing to Parmenides “disgraceful sophisms” (1113F) and with deliberately misconstruing his position (1114D). Plutarch explains that Parmenides was in fact the first to distinguish between the mutable objects of sensation and the unchanging character of the intelligible: “Parmenides…abolishes neither nature. Instead, assigning to each what is appropriate, he places the intelligible in the class of what is one and being—calling it ‘being’ in so far as it is eternal and imperishable, and ‘one’ because of its likeness unto itself and its not admitting differentiation—while he locates the perceptible among what is disordered and changing” (1114D). Plutarch insists that Parmenides’ distinction between what really is and things which are what they are at one time, or in one context, but not another should not be misconstrued as an abolition of the latter class of entities: “how could he have let perception and doxa remain without leaving what is apprehended by perception and doxa?” (1114E-F). Plutarch’s discussion of Parmenides in Against Colotes is particularly significant in that it is a substantial discussion of the relation between his account of Being and his cosmology by an ancient author later than Aristotle that is not overtly influenced by Aristotle’s own discussions. In many ways it anticipates the Neoplatonic interpretation, represented in Simplicius, according to which, broadly speaking, the two accounts delivered by Parmenides’ goddess describe two levels of reality, the immutable intelligible realm and the plural and changing sensible realm (see especially Simplicius’s commentary on Arist. Cael. 3.1.298b14–24; cf. Procl. in Ti. 1.345.18–24).

Later Platonists naturally understood Parmenides as thus anticipating Plato, for Plato himself seems to have adopted a “Platonist” understanding of this thinker whose influence on his own philosophy was every bit as profound as that of Socrates and the Pythagoreans. Aristotle attributes to both Parmenides and Plato the recognition that knowledge requires as its objects certain natures or entities not susceptible to change—to Parmenides in De Caelo 3.1, and to Plato, in remarkably similar language, in Metaphysics 13.4. The arguments at the end of Republic 5 that confirm Aristotle’s attribution of this line of reasoning to Plato are in fact suffused with echoes of Parmenides. Plato likewise has his fictionalized Parmenides present something very close to this line of argument in the dialogue bearing his name: “if someone will not admit that there are general kinds of entities…and will not specify some form for each individual thing, he will have nowhere to turn his intellect, since he does not admit that there is a character for each of the things that are that is always the same, and in this manner he will destroy the possibility of discourse altogether” (Prm. 135b5-c2). The Platonic “natures” Aristotle has in mind are clearly the Forms that Plato himself is prone to describing in language that echoes the attributes of Parmenidean Being, most notably at Symposium 210e-211b and Phaedo 78d and 80b. That Plato’s Forms are made to look like a plurality of Parmenidean Beings might seem to supply Platonic authority for the meta-principle interpretation. This would be a rash conclusion, however, for Plato consistently represents Parmenides as a monist in later dialogues (see, e.g., Prm. 128a8-b1, d1, Tht. 180e2–4, 183e3–4, Sph. 242d6, 244b6). Determining just what type of monism Plato means to attribute to Parmenides in these dialogues ultimately requires plunging into the intricacies of the examination of Parmenides’ thesis in the latter part of the Parmenides.

Plato’s understanding of Parmenides is best reflected in that dialogue’s exploration of his thesis in the Second Deduction. There the One is shown to have a number of properties that reflect those Parmenides himself attributed to Being in the course of fr. 8: that it is in itself and the same as itself, that it is at rest, that it is like itself, that it is in contact with itself, etc. In the Second Deduction, all these properties prove to belong to the One in virtue of its own nature and in relation to itself. This deduction also shows that the One has apparently contrary attributes, though these prove to belong to it in other aspects, that is, not in virtue of its own nature and/or not in relation to itself. Plato would have found a model for his complex account of the various and seemingly conflicting properties of the One in the two majors phases of Parmenides’ poem if he, too, subscribed to an “aspectual” interpretation of Parmenides, according to which the Way of Conviction describes the cosmos in its intelligible aspect qua being, while allowing that this description is compatible with an alternate description of this self-same entity as a world system comprised of differentiated and changing objects. These two perspectives are notably reflected, respectively, in the Timaeus’s descriptions of the intelligible living creature and of the visible cosmos modelled upon it, both of which are suffused with echoes of Parmenides (see especially Ti. 30d2, 31a7-b3, 32c5-33a2, 33b4-6, d2-3, 34a3–4, b1–2, and 92c6–9).

That Aristotle also viewed the two major phases of Parmenides’ poem as dual accounts of the same entity in different aspects is perhaps most apparent in his characterization of Parmenides, in the course of the discussion at Metaphysics 1.5.986b27–34, as having supposed that “what is is one in account but plural with respect to perception.” Theophrastus likewise seems to have adopted such a line. Alexander of Aphrodisias quotes him as having written the following of Parmenides in the first book of his On the Natural Philosophers:

Coming after this man [sc. Xenophanes], Parmenides of Elea, son of Pyres, went along both paths. For he both declares that the universe is eternal and also attempts to explain the generation of the things that are, though without taking the same view of them both, but supposing that in accordance with truth the universe is one and ungenerated and spherical in shape, while in accordance with the view of the multitude, and with a view to explaining the generation of things as they appear to us, making the principles two, fire and earth, the one as matter and the other as cause and agent (Alex.Aphr. in Metaph. 31.7–16; cf. Simp. in Ph. 25.15–16, D.L. 9.21–2).

Many of Theophrastus’s points here can be traced back to Aristotle, including the identification of Parmenides’ elemental light and night as, respectively, fire functioning as an efficient principle and earth functioning as a material principle (cf. Arist. Ph. 1.5.188a20–2, GC 1.3.318b6–7, 2.3.330b13–14, Metaph. 1.5.986b28–987a2). The passage on the whole suggests that, like Plato and Aristotle, Theophrastus understood Parmenides as furnishing dual accounts of the universe, first in its intelligible and then in its phenomenal aspects.

While it would be going too far to claim that Plato, Aristotle, Theophrastus, and the ancient thinkers who follow their broad view of Parmenides as a generous monist got Parmenides right on all points, nonetheless the impulse toward “correcting” (or just ignoring) the ancient evidence for Presocratic thought has in this case gone too far. Both Plato and Aristotle understood Parmenides as perhaps the first to have developed the idea that apprehension of what is unchanging is of a different order epistemologically than apprehension of things subject to change. More fundamentally, Plato and Aristotle both came to understand Parmenides as a type of generous monist whose conception of what is belongs more to theology or first philosophy than to natural science. This involved understanding Parmenides’ cosmology as his own account of the world in so far as it is subject to change. It also involved understanding the first part of Parmenides’ poem as metaphysical, in the proper Aristotelian sense of being concerned with what is not subject to change and enjoys a non-dependent existence. Most importantly, both Plato and Aristotle recognized that a distinction between the fundamental modalities or ways of being was central to Parmenides’ system. None of these major points is tainted by the kind of obvious anachronism that rightly makes one suspicious, for instance, about Aristotle’s identification of Parmenides’ light and night with the elements fire and earth. None of these broad points, in other words, involves Plato or Aristotle viewing Parmenides through the distorting lens of their own concepetual apparatus. The next section will outline the view of Parmenides’ philosophical achievement that results from attending to his modal distinctions and to the epistemological distinctions he builds upon them.

### 3.5 The Modal Interpretation

Although What Is in Parmenides has its nearest analogue in these divine principles, Parmenides himself never in the extant fragments calls What Is divine or otherwise suggests that it is a god. Instead, he develops an exhaustive conception of what what must be has to be like, by systematically pursuing the fundamental idea that what must be both must be or exist, and must be what it is, not only temporally but also spatially. Whatever other attributes it might have that cannot be understood to belong to it in one of these ways do not enter into Parmenides’ conception of What Is. Thus it has none of the features of the religious tradition’s heavenly gods that persist as attributes of Xenophanes’ greatest god, despite resembling it in other respects. If Xenophanes can be seen as a founder of rational theology, then Parmenides’ distinction among the principal modes of being and his derivation of the attributes that must belong to what must be, simply as such, qualify him to be seen as the founder of metaphysics or ontology as a domain of inquiry distinct from theology. <https://plato.stanford.edu/entries/parmenides/>

**Plato synthesizes the ideas of Pythagoras, Heraclitus and Parmenides. We see it all on display in our selection we are reading. Hope you enjoyed the tour. Sorry again for the lengthy quotation of background material.**

**(\*) Remember the question: *Why is there anything instead of nothing?* Above I wrote that there is a rabbit hole here. What do I mean?**

**It’s Ricky Gervais’s version of a thought experiment.** [**He used it in an exchange with Stephen Colbert.**](https://www.youtube.com/watch?v=P5ZOwNK6n9U) **Two groups of people are under a kind of a Veil of Ignorance – they know a lot about themselves, they are rational and so on, but they have a deficit. One shows up in our modern world without fiction ever being known, there are no creation stories, novels etc. but they have engineering science, non-fiction history type books. Will this group create the creation stories found in the world’s religions in 1000 years? Gervais concludes probably not.**

**The other group is introduced to the modern world without basic science information, but there are engineering books and fiction. Would they be able to write those science books in 1000 years? “Ya sure you bet’cha!”**

**Christians say that they could explain the world as a gift from god. But this would not satisfactorily convince someone with more science; imho.**

**Lots more to say how it works day in day out: Once we notice the thought which is packed with emotion, we can notice the content and separate it from the emotion. We can deal with the content, and let the emotion fall away. This will be discussed when we hit Buddhism at the end of the semester.**

**Thanks for reading.**

**Dave Danielson**