PRESOCRATIC PHILOSOPHY

From *The History of Philosophy: A Short Survey*

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Revised 9/1/2017

CONTENTS

A. Introduction
   - Beyond Mythology
   - Issues of the Presocratics
B. Milesians
   - Thales: Water
   - Anaximander: The Boundless
   - Anaximenes: Air
C. Ionians
   - Pythagoras: Mathematical Relations
   - Heraclitus: Change and the Logos
D. Eleatics
   - Xenophanes: Anthropomorphism and Pantheism
   - Parmenides: The One
   - Zeno of Elea: Paradoxes
E. Pluralists
   - Empedocles: Four elements and Two Forces
   - Anaxagoras: Mind and the Divisibility of Material Ingredients
F. Atomists
   - Atoms in the Void
   - The Mind as Material
G. Sophists
   - Protagoras: Relativism
   - Gorgias: Skepticism
H. Conclusion
A. INTRODUCTION

The story of philosophy in Western civilization begins in ancient Greece, which produced three of the world’s greatest thinkers, namely, Socrates, Plato and Aristotle. While it would be nice to start our study with Socrates, the first prominent figure in the history of philosophy, the fact is that Socrates did not create his views from thin air. Rather, he was the outgrowth of a remarkably fertile philosophical environment within Greece that had been germinating for a couple centuries. We call this early period Presocratic philosophy, that is, philosophy before Socrates, and well over 100 philosophers actively contributed to its accomplishments. We will look at the views of fourteen especially prominent Presocratic thinkers.

Beyond Mythology

Even before the Presocratic philosophers came on the scene, religious mythology was already setting the conceptual stage for philosophical speculation. Religion, then as now, was a powerful social force in shaping views of human nature and the cosmos. According to the Greeks, the gods bring about natural disasters, make demands on human conduct, and determine our place in the afterlife. Two Greek mythologists in particular developed an especially sophisticated religious world-life view. The first is Homer (fl. c. 750 BCE), the famed author of the epic tales the Iliad and the Odyssey, which chronicle the adventures of a hero named Odysseus. Throughout his journeys to the underworld and other parts of the mythological universe, Odysseus regularly encounters gods and strange creatures, sometimes appeasing them, other times battling them. Second is Hesiod (fl. c. 700 BCE), author of the Theogony, a work that describes the origins of hundreds of deities from a common pair of ancestors at the beginning of the world.

The first philosophers of ancient Greece moved beyond Homer’s and Hesiod’s traditional mythological explanations of the world and stressed the rational unity of things. There is one unique aspect of Homer’s and Hesiod’s mythology that may have jump-started early Greek philosophy: their cosmologies do not attribute the creation of the world to the work of the gods. While Zeus is the supreme god, he is not described as the creator. Homer takes the universe as a given, and Hesiod describes its origins as follows:

First Chaos was created, then wide-bosomed Earth, the eternal unshaken foundation of the immortal gods who inhabit the snowy peaks of Olympus or the gloomy Tartarus within the depths of the wide-pathed Earth. Love then arose, most beautiful among the immortal gods, which
who loosens the limbs and overcomes the mind and wise counsels of all
gods and mortal men. [Hesiod, *Theogony*]

For Hesiod, first there is emptiness, then earth, and only then do the gods appear. And, when the gods do appear on the scene, they behave in a rather disorderly way, and often bend the operations of nature according to their whims. This all leaves much room for speculation about how the physical cosmos emerged, what it was composed of, and what gives it order. The explanations offered by the first philosophers were not only philosophical, but, by the standards of their time, they were also scientific. Thus the first philosophers were also the first scientists, and, in fact, many had practical interests in mathematics, astronomy and biology.

**Issues of the Presocratics**

Over a period of 200 years, the Presocratic philosophers focused on three key issues. First is the problem of *the one and the many*, that is, explaining how one basic thing can be the source of many varied things. The world contains an enormous variety of objects, some living, others inanimate; some solid, others liquid. It seems reasonable to suppose that all things come from a common source or type of stuff. Identifying that common source, though, is the challenge. Second is the problem of *change and constancy*, that is, explaining how things remain constant as they change over time. Not only are there many kinds of things in the world, but each one is subject to change. Living things like trees grow old and die; inanimate objects like rocks weather away and change their form. As things go through changes, there’s still something about them that enables them to retain their identity. Third is the problem of *relativism*, namely, determining whether principles are absolute or created by people. Suppose that I arrive at some reasonable explanation of how the world operates. Is that explanation true just for me, or have I discovered something more universal that must be true for everyone? While some truths might appear to be independent of me, identifying those truths is a challenge.

The theories of the Presocratic philosophers were daring, sometimes to the point of being bizarre. Being the first ones to venture into the uncharted territories of both philosophy and science, they explored virtually any explanation of things that seemed reasonable, and because of this there is a richness and diversity to their views that we have not since seen. This makes it all the more unfortunate that none of the books authored by the Presocratic philosophers have survived intact. All that we have are some summaries and scattered sentences from their works that are quoted by later writers such as Plato and Aristotle. From these quotation fragments, we are left to reconstruct
their original views. Sometimes a clear image emerges; other times, as we will see, it’s a matter of guesswork.

**B. MILESIANS**

The first known philosophers of ancient Greece were from a city-state called Miletus. Located on the west coast of what is now the peninsula of Turkey (then called Anatolia), Miletus was a thriving seaport, and part of a region of cities called Ionia. As a hub of sea trade, residents of Miletus were in contact with surrounding cultures and as such were influenced by many of their views, particularly theories of astronomy that came from civilizations to the east of Greece. The three first philosophers from Miletus were Thales, Anaximander and Anaximimnes, all of whom attempted to answer the question “What is the common stuff from which everything is composed?”

**Thales: Water**

The very first among the Milesian philosophers was Thales (c. 625-545 BCE) who held that water is the basic stuff of all things. Thales himself didn’t write anything, and what we know of him comes from later sources. He was famed for his expertise in astronomy and geometry, and, according to one story, he successfully predicted an eclipse of the sun in the year 585 BCE. There are colorful stories about his life, such as the following which describes how he fell into a well:

> A witty maid-servant saw Thales tumbling into a well and said that he was so eager to know what was going on in heaven that he could not see what was before his feet. This is applicable to all philosophers. The philosopher is unacquainted with the world; he hardly knows whether his neighbor is a man or an animal. For he is always searching into the essence of man, and enquiring what such a nature ought to do or suffer different from any other. [Plato, *Theaetetus*]

The event very likely never took place, and, in fact, this story represents a common stereotype about philosophers both then and now: they are so absorbed in their speculations that they don’t pay attention to where they’re walking. Another common stereotype of philosophers is that their skills have very little real world application, and such a criticism was allegedly raised against Thales as well. As the story goes, though, Thales proves them wrong by making a bundle of money investing in olive oil:
People detested Thales for his poverty, as if the study of philosophy was useless. However, it is reported that, through his skill in astronomy, he perceived that there would be a large harvest of olives that year. Then, while it was still winter, and having obtained a little money, he put deposits on all the olive oil businesses that were in Miletus and Chios. He obtained them at a low price, since there was no one to bid against him. When the season came for making oil, many people wanted the rights, and he sold them all at once for whatever terms he pleased. Raising a large sum of money by that means, he convinced everyone that it was easy for philosophers to be rich if they chose it, but that that was not what they aimed at. In this manner is Thales said to have shown his wisdom. [Aristotle, Politics, 1.11]

The details of Thales’ philosophy are as sketchy as those of his life. The best account is from Aristotle, who notes that all of the first philosophers attempted to discover the underlying stuff of all things, but they disagreed about what that particular stuff was. The Greeks already held to the view that there were four basic elements, namely, earth, air, fire and water. From these, Thales selected water as the primary stuff of nature, and Aristotle speculates about why Thales chose water specifically:

Thales, the founder of this type of philosophy, said the principle is water (for which reason he declared that the earth rests on water). Perhaps he got this notion from seeing that the nutrition of all things is moist, and that heat itself is generated from the moist and kept alive by it (and that from which they come to be is a principle of all things). Perhaps he also got his notion from the fact that the seeds of all things have a moist nature, and that water is the origin of the nature of moist things. [Ibid.]

As Aristotle explains, moisture seems to be an essential element in all living things. Water also seems like a reasonable choice since it’s at a middle state between earth and air insofar as some moist substances can evaporate and turn into air, and others solidify and turn to slime or earth.

Even if we understand Thales’ reasoning for why he selected water as the primary substance, there is still some haziness about what it means for water to be the source of all things. On the one hand, it could mean that the world originated from water, a view that had been around in mythology for a long time. On the other, it could mean that the world is still made of water, and things as they are now are composed of water as their primary stuff. This second interpretation of Thales is the more common one, and the one that constitutes Thales legitimate claim to fame. It seems like an easy thing to
identify a single element like water as the primary stuff of all things. But it is a very sophisticated move to abandoned mythological foundations of the natural world in favor of physical explanations, and this is precisely what Thales did.

**Anaximander: The Boundless**

Following Thales was his student and fellow-Milesian named Anaximander (c. 610–545 BCE), who held that the underlying cause of everything was an indefinable stuff that he called the *boundless*. One reported story of his life is that “when he sang, the children laughed; when hearing of this he said, ‘We must then sing better for the sake of the children.’” He was famed as an astronomer, made clocks, and was supposedly the first person who drew a map of the earth. Most significantly, though, he was the first of the Greek philosophers to produce a written account of his views on the subject of nature. Unfortunately, only a couple sentences of it survive, just hinting at his view that the boundless is the primary stuff: “The boundless is the original material of existing things; further, the source from which existing things derive their existence is also that to which they return at their destruction, according to necessity.” We get a slightly better picture of his views from a comment made by a later philosopher:

> Anaximander of Miletus, son of Praxiades, a fellow-citizen and associate of Thales, said that the material cause and first element of things was the boundless, he being the first to introduce this name of the material cause. He says it is neither water nor any other of the so-called elements, but a substance different from them which is infinite, from which arise all the heavens and the worlds within them. [DK]

The picture that emerges from these discussions is that Anaximander agreed with Thales that there was a single source of all things, yet he criticized Thales for selecting water as the fundamental element. More precisely, he argued that *none* of the traditional four elements could be the primary stuff, as Aristotle explains:

> [According to Anaximander.] there is a body distinct from the elements, the boundless, which is not air or water, in order that the other things may not be destroyed by their infinity. The elements are in opposition to each other: air is cold, water moist, and fire hot. Therefore, if any one of them were infinite, the rest would have ceased to be by this time. Thus, he said that what is infinite is something other than the elements, and from it the elements arise. [Aristotle, *Physics*, 3.3]
According to the above, there is a fundamental conflict between the qualities that we see in the four primary elements: something which is wet cannot cause something which is dry. If anyone of the four elements was the primary substance, spread infinitely throughout the cosmos, then it would counteract the others and prevent them from existing. Thus, the ultimate cause of things must be some invisible and limitless physical substance, which is capable of morphing into all the physical things that we see. The importance of Anaximander’s theory is that he was the first to ground ultimate reality in something which is non-perceptible. Unlike earth, air, fire and water, which we know through the senses, the boundless is a substance that we cannot detect in that way. Many philosophers after Anaximander similarly proposed a non-sensory explanation of things.

Anaximenes: Air
The third of the founding philosophers from Miletus was Anaximenes (c. 585-525 BCE), who held that condensed and expanded air is the source of everything. He was a student of Anaximander and, like his teacher, he wrote a book with only a sentence or two surviving. The most notable fragment is this, which stresses the central role of air in conception of reality: “Just as our soul, being air, holds us together, so do breath and air surround the whole world.” We find a more complete account of his view of air in the following summary from an early philosopher:

Anaximenes of Miletus, who had been an associate of Anaximander, said, like him, that the underlying substance was one and infinite. He did not, however, say it was indeterminate, like Anaximander, but determinate; for he said it was Air. It differs in different substances in virtue of its rarefaction and condensation. In its thinnest state it comes to be. Being condensed it becomes wind, then cloud, and when still further condensed it becomes water, then earth, then stones, and the rest of things comes to be out of these. [DK]

On Anaximenes view, then, physical objects differ only in how condensed the air is in a given space: stuff is airy when less compressed and solid when more compressed. When air begins to be compressed, it condenses into wind, then cloud, then water, then earth, then stones, and everything else that we see comes from these. The importance of this is that Anaximenes was the first to suggest that reality could be measured. We could at least in theory say that a certain amount of pressure exerted on an area of air will result in it attaining a specific level of solidity. This provides a more scientific account of reality,
particularly in comparison to Anaximandar’s theory which removed ultimate reality from the realm of what we can perceive.

**C. IONIANS**

Thales, Anaximander and Anaximenes started a philosophical trend in their geographical region of Ionia, and, from neighboring cities, they were joined by two other philosophers, namely, Heraclitus and Pythagoras. Together, these five philosophers are sometimes seen as forming a distinct *Ionian school* of philosophy.

**Pythagoras: Mathematical Relations**

Famed mathematician and philosopher Pythagoras (c.570–c.497 BCE) held that *mathematical relations* underlie reality. Born on the Greek island of Samos—part of the Ionian region along the Turkish peninsula—as a young man Pythagoras spent much time studying religious practices throughout the Mediterranean area, and in time formed a colony of followers for both religious and scientific purposes. While he wrote nothing, his views were recorded by his followers, most of which, though, have not survived.

The Pythagorean school itself was a remarkable institution, and the level of reverence that Pythagoras’s followers had for him rose to a cult-like status, as we see here:

> Pythagoras is said to have been a man of the most dignified appearance, and his disciples adopted an opinion about him that he was Apollo who had come from [the mythical realm of] Hyperborea. It is said, that once when he was stripped naked, he was seen to have a golden thigh. There were many people who affirmed that, when he was crossing the river Nessus, the river called him by his name. [Diogenes, *Lives*, “Pythagoras”]

His students also believed that his teachings were prophesies of the gods. There were two groups of followers within the Pythagorean school. First there was the privileged inner circle of followers, called the “mathematicians,” who could study with him in person. Second, there was an outer circle, called the “listeners”, who couldn’t see Pythagoras directly but only received summaries of his views and listened to him from behind a curtain. The Pythagoreans also had a list of strange rules to follow, which included these:

> Do not stir the fire with a knife. Rub out the mark of a pot in the ashes. Do not wear a ring. Do not have swallows in the house. Spit on your nail
parings and hair trimmings. Abstain from eating beans. Abstain from eating living things. Roll up your bedclothes on rising and smooth out the imprint of the body. Do not urinate facing the sun. [Ibid]

As Pythagoras’ fame spread, legend has it that no fewer than 600 scholars would try to visit him each day, “and if any of them had ever been permitted to see him, they wrote about it to their friends as if they had gained some great advantage.” Pythagoras died, as the story goes, while visiting a friend’s home for dinner; the house was set fire by his enemies who feared that he would grow in power, take control of the city, and become a tyrant.

Today Pythagoras’s name is associated with the Pythagorean theorem, and, as legend has it, when he discovered it he sacrificed 100 cattle to the gods. He also influenced the systematic approach to geometry that was later formalized by Euclid. For Pythagoras, though, mathematics was at the center of his philosophy insofar as he believed that mathematical relations govern all things. In fact, he considered numbers themselves to be sacred. Everything is related to mathematics and, through mathematics, everything can be predicted and measured in rhythmic patterns. Two types of mathematical ratios were especially important for Pythagoras: the Tetractys and musical harmony.

The Tetractys is a mystical symbol involving ten points arranged in four rows: one, two, three, and four points in each row respectively:

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The four rows represent earth, air, fire and water, and various combinations of the points generate important numbers and ratios. The Tetractys is similar to the aesthetic principle of the more well-known “Golden Ratio” that was developed later by Euclid and Renaissance artists. With both the Tetractys and the Golden Ratio, objects that contain special proportions have a natural beauty or balance to them such as, for example, a window opening that is three feet wide and four feet tall—where three and four are the bottom two rows of the Tetractys. The reverence that Pythagoras had for the Tetractys is seen in the following Pythagorean prayer:

Bless us, divine number, you who generated gods and men. O holy, holy Tetractys, you that contains the root and source of the eternally flowing creation. For the divine number begins with the profound, pure unity until it comes to the holy four; then it produces the mother of all, the all-
comprising, all-bounding, the first-born, the never-swerving, the never-tiring holy ten, the keyholder of all. [DK]

For Pythagoras, the cosmos itself is arranged in ratios connected to the Tetractys, and, as described below, music is a perfect example of how ratio and harmonious structure are interrelated:

The tetractys is a certain number, which being composed of the four first numbers produces the most perfect number, ten. For one and two and three and four come to ten. This number is the first tetractys, and is called the source of ever flowing nature. This is because, according to them, the entire cosmos is organized according to harmony, and harmony is a system of three intervals: the fourth, the fifth, and the octave. The proportions of these three intervals are found in the aforementioned four numbers. [Sextus Empiricus, Against the Mathematicians, 7.94-95]

Musicians, particularly players of stringed instruments, will instantly recognize the mathematical basis of the three harmonic intervals mentioned above. More precisely they are these:

Musical 4th: interval of 4:3 (e.g., divide a string at the 1/4 mark)
Musical 5th: interval of 3:2 (e.g. divide a string at the 1/3 mark)
Musical octave: interval of 2:1 (e.g., divide a string at the 1/2 mark)

Like other Presocratic philosophers, Pythagoras also had theories about most everything, including how the cosmos was originally formed and then developed. The following passage describes Pythagoras’ view of the cyclical nature of the cosmos:

Pythagoras declared that the soul is immortal, then that it changes into other kinds of animals. In addition, the things that happen recur at certain intervals, and nothing is absolutely new. Also, all things that come to be alive must be thought akin. Pythagoras seems to have been the first to introduce these opinions into Greece. [Porphyry, Life of Pythagoras, 19]

There are two cyclical aspects of the cosmos alluded to in the above. The first is what we now call reincarnation: upon the death of my body, my soul lives on by migrating to the body of a newborn baby, and when that body dies I move on to another. The second is that the events in the cosmos itself repeat
after certain periods of time. Both of these are ideas found in Hindu thought, which Pythagoras might have come in contact with during his travels.

Among his most notable pieces of wisdom is his comparison of life to what takes place at Olympic games. There are, he argues, three types of lives that we see among people at the games. The lowest is the merchant who seeks to make money by selling to the swarm of visitors. Next is the athlete who participates in the games to win a prize. The highest, though, is the spectator who observes the events, which is a metaphor for the philosopher who surveys the world and reflects on it.

**Heraclitus: Change and the Logos**

Heraclitus (c. 540–c. 480 BCE) argued that an ever-changing world around us is held together through a unifying principle that he called the logos. Heraclitus was born into an aristocratic family from the Ionian city of Ephesus, not far from the city of Miletus where Greek philosophy first began. As he grew in fame, he also became disliked by his fellow citizens for his superior tone and gained the nickname "the obscure" for his use of riddles. Self-taught, he claimed that he investigated everything there was to know and learned everything by himself. His book *On Nature* was supposedly composed in an intentionally obscure style so that only those who were wise would understand it, thereby protecting himself from ridicule by the common people. Legend has it that the great Persian king Darius requested that Heraclitus travel to his palace to clarify the obscurities within the book. Heraclitus refused, saying that he had no interest in receiving such a royal honor and was content to live modestly. Progressively withdrawing from society, he spent his last years living in the mountains, eating grasses and plants. Becoming sick with edema, he returned to the city to find a cure. But when he approached physicians with his problem, he presented it in the form of a riddle, which they couldn’t understand. Attempting to cure himself, he covered his body with cow dung which brought on his death.

The traditional understanding of Heraclitus’s obscure philosophy is that it has two main themes, one of which is a problem that he poses, and the other is his solution to the problem. The problem is that everything in the world is continually changing. Things grow then decay, are created then disintegrate. The most permanent things we see like mountains or stone monuments wear down with time. As things change, they exhibit opposing tendencies: “Cold things become warm, and what is warm cools; what is wet dries, and the dry is moistened.” He famously makes this point with the analogy of stepping into a river: “You cannot step twice into the same rivers; for fresh waters are ever flowing in upon you. It scatters and it gathers; it advances and retires.”
Constant change, then, is the problem. What, though, is the solution? According to Heraclitus, there is a unifying plan that underlies the coherence of all natural changes and harmonizes their opposing tendencies. He dubbed this the *logos*, the Greek word meaning “plan” or “formula”. In this passage he describes the difficulty people have in recognizing and understanding the logos:

> It is wise to listen, not to me, but to the Logos, and to agree that all things are one. . . . Though this Logos is true always, yet people are as unable to understand it both when they hear it for the first time and when they have heard it at all again. For, though all things come into being in accordance with the Logos, people seem as if they had no experience of it. [DK]

For Heraclitus, then, as things in the world go through change, exhibiting their opposing characteristics, the logos gives them their unity. Even though the flowing river is constantly changing by scattering and gathering, the logos gives it structure so that we can recognize it as a river, rather than merely a series of haphazard and opposing events.

Heraclitus identified the ordering structure of the logos with one of the four elements, namely fire. He describes the cosmic role of fire here:

> The ordered universe, which is the same for all, was not made by one of the gods or by humans. Rather, it always was, is now, and forever will be an ever-living fire, ignited in measure, and extinguished in measure. [DK]

Fire not only gives structure to the world, but it is also the primary stuff from which everything is made. In this way he follows in the footsteps of Thales and his fellow philosophers from Ionia who grounded the unity of things in a specific element. Similar to Anaximenes’ theory, Heraclitus held that things take on a different form based on how expanded or compressed fire is. When more compressed, it becomes water, and, when even more compressed, earth.

**D. ELEATICS**

The most radical philosophical theory among the early Greeks was proposed by a group of philosophers from the city of Elea, a Greek colony on the south-west coast of Italy. They are thus referred to as Eleatic philosophers in honor of their home town. The leader among the Eleatic philosophers was a man named Parmenides, who argued that our every day perceptions of the world are
completely wrong, and all reality is the One, that is, a single, undifferentiated and unchanging thing. We will look at three Eleatic philosophers who are associated with this view: Xenophanes who first suggested it, Parmenides who developed it, and Zeno who defended it.

**Xenophanes: Anthropomorphism and Pantheism**

Xenophanes (c. 570–c. 478 BCE) was a self-taught poet and philosopher who attacked traditional notions of the gods and offered a conception of God as identical to the cosmos as a whole. Born in the Ionian city of Colophon—near Miletus—Xenophanes left home when around 25 to be a traveling poet throughout the Greek cities, and for some time settled in the city of Elea. A story relates how a fellow philosopher once said to Xenophanes that he was unable to find a wise person. Xenophanes replied, “That’s very likely, since it takes a wise person to discover a wise person.” Xenophanes authored several works in poetic form, and recited them publicly during his travels. Of the surviving material from them, three topics that he discusses are especially important in philosophy.

First, he holds that our concepts of things are often relative to the perceiver; he writes, “If god had not made brown honey, people would think that figs are far sweeter than they do think of about them.” This may be the first written account of the philosophical position of relativism, namely, the view that the truth of some important claims depends on the views of some individual or social group. Xenophanes’ example of the sweetness of figs focuses specifically on the information that we receive through our senses. Figs indeed taste sweet to us, but the level of sweetness that we assign to figs depends on whether we’ve ever had honey, which is much sweeter. Perceptual relativism like this is rather innocent, but other areas of relativism are more controversial, such as the view that whether the rock in front of me actually exists or whether the reality of the rock depends on the views held by me or some social group. From his fragmentary writings, it’s not clear how far Xenophanes pushed the issue of relativism, although some Greek philosophers after him indeed pushed it to its extreme.

A second area of focus for Xenophanes is his satirical attack on anthropomorphic conceptions of the gods, particularly as held by Homer, Hesiod and Pythagoras. Anthropomorphism is the tendency to ascribe human qualities to non-human things, and this occurs in religion when we describe divine beings as having human qualities. He writes,

Mortals suppose that the gods are born and have clothes and voices and shapes like their own.
The Ethiopians make their gods black and snub-nosed; the Thracians say theirs have blue eyes and red hair.

If oxen and horses or lions had hands, and could paint with their hands, and produce works of art as people do, horses would paint the forms of the gods like horses, and oxen like oxen, and make their bodies in the image of their various kinds. [DK]

His point is that something in human nature prompts us to view divine beings as having human characteristics just like our own. Xenophanes notes extreme cases in which believers hold that God has a physical form similar to that of humans. Less extreme cases of religious anthropomorphism, though, would involve ascribing human-like mental processes to God, such as holding that God experiences emotions like love, anger, compassion. According to Xenophanes, traditional Greek religion depicts the gods as having the worst possible human characteristics. He writes, “Homer and Hesiod have ascribed to the gods all things that are shameful and disgraceful among mortals, such as theft, adultery and the deception of one another.” For Xenophanes, no level of religious anthropomorphism is acceptable, and we need to envision the gods in a radically different way.

How, then, should we view the nature of divine beings? This leads us to Xenophanes’ third philosophical contribution, which is his view that God is identical with nature as a whole—a position that we now call pantheism, literally meaning “all God.” The standard view of God in Western civilization, in ancient times as well as now, is that God created the world, but exists independently of it: God has his own unique identity, and the created universe has its own. Pantheism, though, denies that God and the universe have their own independent identities; rather, they are one and the same thing. The following is a summary of Xenophanes view of God, as related by an early philosopher:

The essence of God is of a spherical form, in no respect resembling humans. The universe can see and hear, but cannot breathe; it is in all its parts intellect, and wisdom, and eternity. [Diogenes, Lives, “Xenophanes”]

The spherical form of God mentioned above is the form of the universe itself, which was a common conception of the cosmos in early Greek astronomy. Thus, for Xenophanes, God is the totality of the universe in its spherical form. Even though God and the universe are one and the same, God still has some type of mental qualities, as Xenophanes describes here:
God is one, the greatest among gods and humans, who is like mortals neither in form nor in thought. He sees all over, thinks all over, and hears all over. But without toil he sways all things by the thought of his mind. He always remains in the same place, without moving at all; nor does it suit him to go about here or there. [DK]

It’s as though God has one giant body that covers the entire physical universe, yet at the same time God has a mind that monitors everything that takes place within him and can move everything with the mere thought of his mind. Having said all that, though, Xenophanes cautiously notes the limits of our ability to know God:

There never was nor will be a person who has certain knowledge about the gods and about all the things I speak of. Even if he should chance to say the complete truth, yet he himself does not know that it is so. But all may have their opinions. [DK]

Ultimately, according to Xenophanes, we are left with our own opinions on the subject of God, which again raises the issue of relativism with respect to our religious knowledge. It is Xenophanes’ pantheistic view of God and the cosmos that influenced the next two philosophers from Elea, namely Parmenides and Zeno, thus creating a localized pantheistic school of thought.

**Parmenides: The One**

Parmenides (b. 510 BCE) was born into a wealthy family in the city of Elea, and his only known writing is a book titled *On Nature* that he composed in poetic verse as allegedly conveyed to him by the goddess Persephone. In a nutshell, Parmenides argues that only one unchanging thing exists, and it is an indivisible spherical-shaped thing, like a toy marble, which he calls “the One”. It might appear that the world consists of countless different things—me, you, the chair I’m sitting on, the dog barking down the street. According to Parmenides, though, this is all just an illusion, and I can’t trust my common sense; the truth is that only the One exists.

Why would he offer an account of the world that is so contrary to common sense? The answer is not entirely clear. While Parmenides and his followers were the only major thinkers in Western civilization at that time to offer this view, it has close similarities with some Eastern philosophical views, particularly within Hinduism. And within Eastern philosophical traditions the proof of “the One” is based on mystical experience. When you enter a mystical state of enlightenment through meditation, you will experience the oneness of
everything and see that the world of multiplicity and change around us is an illusion. Maybe Parmenides was inspired by this kind of a mystical experience, but we know so little about his life and background that there is no way of telling.

Regardless of what inspired him, he offers a proof of his theory of “the One,” which requires serious attention. He begins arguing that there are just two paths of inquiry: the path of assertion in which you maintain that something is, and the path of denial in which you maintain that something is not. If we think about these two paths, we’ll see that the path of denial is nonsense: you cannot know what is not, and you can’t even express it. He makes this point here:

There are only two ways of inquiry that can be thought of. The first, namely, that it is (and that it is impossible for it not to be), is the way of belief, for truth is its companion. The other way of inquiry, namely, that it is not (and cannot be), is a path that none can learn at all. For you cannot know what is not, nor can you express it. [DK]

That leaves us with the remaining path of assertion: the only meaningful way of inquiry is to assert that something is, as he maintains as follows:

It is the same thing that can be thought and that can be. What can be spoken and thought must be; for it is possible for it to be, but impossible for nothing to be. . . . One path only is left for us to speak of, namely, that it is. In this path are very many signs that “what is” is uncreated and indestructible; it is complete, immovable, and without end. [DK]

His point is that we can say anything that we want about reality, so long as we don’t use the word “not”, since that would involve the path of denial. Establishing the path of assertion is only preliminary. The next step is to draw out the implications of asserting only that something is. The result is that we arrive at the qualities of the One, namely, that it is eternal, indivisible, unmov ing, and round.

The first implication of the path of assertion, then, is that whatever exists must be eternal, that is, uncreated and indestructible. If we say that a thing came into existence or will go out of existence, then this would require saying “it is not” before it existed and “it is not” after it existed. But that would take us down the path of denial since we’d be using the terms “not”, and thus uttering nonsense.
[The One is eternal], for how can “what is” be going to be in the future? Or how could it come into being? If it came into being, then it is not. Nor is it, if it is going to be in the future. Thus is becoming extinguished and passing away not to be heard of. [DK]

The second implication of the path of assertion is that whatever exists is indivisible. If we say that it has parts, then we maintain some of it is here, but not there. This, again, takes us down the impossible path of denial. Parmenides writes,

[The One] is not divisible, since it is all alike, and there is no more of it in one place than in another, to hinder it from holding together, nor less of it, but everything is full of what is. For this reason it is wholly continuous; for what is, is in contact with what is. [DK]

Third, the One is unmoving, since movement requires us to say that it is now in this position, but not in that position, yet again taking us down the path of denial. He writes,

It is immovable in the bonds of mighty chains, without beginning and without end; since coming into being and passing away have been driven afar, and true belief has cast them away. It is the same, and it rests in the self-same place, abiding in itself. And thus it remains constant in its place; for hard necessity keeps it in the bonds of the limit that holds it fast on every side. For this reason it is not permitted to “what is” to be infinite; for it is in need of nothing; while, if it were infinite, it would stand in need of everything. [DK]

Finally, the One is round. If it was irregularly shaped, one part would be greater, and another part smaller; this would require us to say that this part is not like that part, yet again taking us down the path of denial. He writes, “Since it has a furthest limit, it is complete on every side, like the mass of a rounded sphere, equally poised from the center in every direction; for it cannot be greater or smaller in one place than in another.”

According to Parmenides, then, what we can say about reality is that it is an eternal, single, unmoving, and round thing.

Zeno of Elea: Paradoxes
We might think that Parmenides’ theory of the One was so bizarre that no one would take him seriously, much less adopt it. Surprisingly, though, he had followers who staunchly defended his position, one of which was Zeno (c. 490–
430 BCE), Parmenides’ student from the same city of Elea. Zeno’s claim to fame is a book he wrote titled *Attacks* which contains paradoxes that ultimately defend Parmenides’ view of the One. Zeno’s purpose for writing the book is portrayed by Plato in the following:

The motive of my book was to protect Parmenides against ridicule by showing that the hypothesis of the existence of the many involved greater absurdities than the hypothesis of the one. The book was a youthful composition of mine, which was stolen from me, and therefore I had no choice about the publication. [Plato, *Parmenides*]

The target of Zeno’s work is the common sense world of appearances that virtually everyone believes in. We all ordinarily believe that the world contains a multiplicity of things: you, me, the chair that I’m sitting on. We also believe that things in the world go through change: they come into existence, change configuration in innumerable ways, then go out of existence. Zeno then presents a series of paradoxes that show the impossibility of motion or any other change, and thereby show the absurdity of this so-called “common sense” view of the world. Thus, those who disagree with Parmenides theory of the One by defending common sense appearances will find greater difficulties than those they were trying to avoid. In short, our common sense views of the world turn out to be even more absurd than Parmenides’ view of the One.

While Zeno is reported to have produced more than 40 paradoxes in defense of Parmenides, little of his actual wording survives, and we are able to reconstruct only a handful of them. One group of paradoxes targets the common sense conception of motion, that is, the basic view that things in the world around us move—such as leaves blowing around in the yard, a dog running down the street, a ball rolling across the floor. In the following, Aristotle summarizes three of Zeno’s paradoxes of motion:

The first asserts the non-existence of motion on the ground that that which is in motion must arrive at the half-way stage before it arrives at the goal. This we have discussed above. [i.e., “It is always necessary to traverse half the distance, but these are infinite, and it is impossible to get through things that are infinite.”]

The second is the so-called ‘Achilles’, and it amounts to this, that in a race the quickest runner can never overtake the slowest, since the pursuer must first reach the point whence the pursued started, so that the slower must always hold a lead. ...

The third is that already given above, to the effect that the flying arrow is at rest [i.e., “If everything when it occupies an equal space is at
rest, and if that which is in locomotion is always occupying such a space at any moment, the flying arrow is therefore motionless.”] [Aristotle, *Physics*, 6]

Let’s look at these in more detail. The first is called the paradox of the stadium runner. Imagine that a runner sets off on a race track. Before he can reach the finish line, he must pass the halfway point. Before he can do that, though, he must pass the 1/4-way point, and before that the 1/8-way point, and so on to infinity. The runner would have to cross an infinite number of way points in a finite time, and thus can never reach his goal.

The second argument is called the paradox of Achilles and the Tortoise, and is similar in structure to the first. Achilles is the Greek mythological hero who could run like the wind. Suppose that Achilles was in a race with a much slower tortoise, and gave the tortoise a few second head start. Could Achilles overtake the tortoise? No, says Zeno. Suppose that the tortoise gets to point A on the road; Achilles will need to reach point A before overtaking the tortoise. But, once Achilles reaches point A, the tortoise will have moved on to point B, and Achilles will need to reach point B before overtaking it. Again, though, once Achilles reaches point B, the tortoise will have moved on to point C, and so on. Since the tortoise is always on the move, regardless of how slowly, it will be moving on to an infinite number of points that Achilles will need to cross. Thus, Achilles can never overtake the Tortoise.

The third paradox, regarding the motion of the arrow, takes a slightly different strategy than the above two and can be formulated as follows:

(1) Anything occupying a place just its own size is at rest.
(2) In the present, a moving arrow occupies a place just its own size.
(3) Hence, in the present, a moving arrow is at rest.
(4) However, in the present a moving arrow always moves.
(5) Hence, a moving arrow is always at rest throughout its movement.

The paradox here is that there’s good reason to say both that, first, the moving arrow is always at rest, and (b) the moving arrow is always in motion.

We might have some quick negative reactions to Zeno’s three paradoxes. First, we might ask why the stadium runner and Achilles just don’t run really fast and quickly cover all the points they need to. But Zeno would say that it doesn’t matter how fast they move: they still need to cover an ever-increasing number of points. This fact doesn’t change, regardless of their speed. Second, we might point out that in real life runners do reach the finish line and overtake slower competitors. Doesn’t this refute Zeno? No it doesn’t, Zeno would say. The question under consideration is whether common sense reality
is only an illusion. Of course it appears as though the runner reaches the finish line. However, the paradoxes of motion aim to show that our underlying assumptions about reality are seriously flawed, specifically our assumption that things actually move at all.

While something indeed seems odd about Zeno’s paradoxes, there is no obvious or easy way out of them. The paradoxes are generated by the underlying assumption that it is impossible to touch infinitely many points in a finite amount of time. One possible solution is to deny that space is really infinitely divisible. According to traditional geometry, for any two points that you designate, there are an infinite number of points between them. For centuries people assumed that this was true of the actual physical world too, and not just true in geometry. But is real space infinitely divisible? Many physicists today say no, and hold that the tiniest portions of space may involve indivisible segments. So, when we move across space we jump from one of these segments to the next, rather than sweeping over an infinite number of points.

E. PLURALISTS

All of the Presocratic philosophers we’ve looked at so far struggled with the problem of the one and the many. On the one hand, our ordinary view of the world is that it is composed of many things. Yet, on the other hand, there seems to be a unifying force behind all of this diversity. How then do we reconcile these two views of reality? The standard solution for Presocratic philosophers was to seek out a single source or explanation of all that exists, whether it’s water, fire, mathematical relations, or the One. There is, though, an alternative strategy called pluralism (literally meaning “many-ism”), which in philosophy refers to the view that many kinds of things exist. Rather than reduce all things to a single force or substance, why not instead reduce everything to a few basic forces or substances? This is the approach taken by two Presocratic philosophers, namely, Empedocles and Anaxagoras.

Empedocles: Four elements and Two Forces
Empedocles (c. 495–c. 435 BCE) held that there are four basic elements—namely earth, air, fire and water—which are organized by the two forces of love and strife. Born in Acragas, a Greek colony in Sicily, Empedocles had varied careers as a physician, politician, and even a magician. He joined the Pythagoreans, but was banned from the school after he published many of Pythagoras’s secret views in a poem; this prompted the Pythagoreans to thereafter exclude all poets from membership. Empedocles also claimed to be a god who was exiled to earth for breaking his Pythagorean vow of
vegetarianism. Like Pythagoras, Empedocles too believed in reincarnation, and in fact argued that, as punishment for his sin, his soul transmigrated into the bodies of animals and even plants. He writes, “For once I was a boy, and once a girl, a bush, a bird, and a fish who swims the sea.” Having sufficiently purified himself, though, he claims to have worked his way back up to the position of a god. To highlight his divine status, he wore bronze sandals, the purple robes of royalty, a garland around his head, and, as the story goes, even performed miracles. He once prevented strong winds from destroying local crops by stretching out animal skins atop a hill to catch the wind. There is also an account of him raising someone from the dead. Empedocles modeled his poetic writing style upon that of Xenophanes and Parmenides, and his principal book, *On Nature*, was the longest philosophical work that appeared up until his time. There are various accounts of his death, one of which is that he died from a chariot injury while attending a festival. Another story describes how he planted his bronze sandal at the mouth of a volcano, making people think that he jumped in.

There are two central themes to Empedocles’ philosophy. First is his view that all things come from the four elements—or *roots*, as he calls them—of earth, air, fire and water. While the four elements had been part of Greek thinking for some time, Empedocles expanded their role to be the four fundamental substances from which all things emerge, and this became the foundation of physics within Europe for the next 2,000 years. Second is his view that two forces are responsible for the mixing and unmixing of the four elements, namely Love and Strife, which function as physical forces of attraction and repulsion. He describes how the four elements and two forces first emerged from the cosmos:

> I will tell you of a twofold process. At one time it [i.e., the cosmos] grew together to be one only out of many, at another it parted to pieces so as to be many instead of one. Fire and Water and Earth and the mighty height of Air. And also, apart from these, dreaded Strife of equal weight to each, and Love in their midst, equal in length and breadth. . . . All these elements are equal and of the same age in their creation. But each presides over its own area, and each has its own character, and they dominate in turn in the course of time. [DK]

All change that occurs in the cosmos results from the combination, separation and regrouping of these indestructible elements, depending on the amount of Love and Strife that is present.

Empedocles continues explaining how the universe as we know it evolved from the original appearance of the four elements and two forces.
Imagine that the cosmos is like a large kitchen blender that contains equal portions of earth, air, fire and water, all swirling around. Suppose, then, that the two forces of Love and Strife are thrown into the blender, where Love has the power to draw the elements together, and Strife has the power to have the elements separate from each other. As the mixture swirls around in the blender, it will exhibit four separate states, depending on how much Love and Strife are sucked into the mix.

Consider first when Strife is pulled into the mix by itself, while Love sinks to the bottom of the blender. As Strife circulates through the four elements, it makes the four elements repel each other, sort of like mixing water and oil. Thus, all the earth collects together in one side of the blender, air on another side, fire on another and water on another. According to Empedocles, this was what the first stage of the cosmos was like. Consider second when Love is pulled into the mix by itself, while Strife submerges to the blender’s bottom. As Love churns into the mix, its attractive powers cause the four elements to blend together into one formless glob of stuff. Empedocles describes this phase of cosmic development here:

> When Strife had fallen to the lowest depth of the vortex, and Love had reached to the center of the whirl, all things came together in it so as to be one only. This did not happen all at once, but they came together at their will each from different quarters. [DK]

Third, consider what happens when a lot of Love, with just a little bit of Strife, mixes through the four elements. While much of the mixture will remain in a single glob because of Love’s powers of attraction, a little bit of Strife will cause some parts of it to separate and create individual things. The problem, though, is that in this state the four elements are not separated quite enough, and the result is that some things become stuck together in grotesque ways, such as the faces of people being stuck to the bodies of animals. Empedocles describes this here:

> Many creatures with faces and breasts looking in different directions were born. Some offspring of oxen had faces of people, while others, again, arose as offspring of people with the heads of oxen. There were creatures in whom the nature of women and men was mingled, furnished with sterile parts. [DK]

Fourth, consider what happens when a lot of Strife, with just a little bit of Love, churns through the four elements. Again, individual objects will emerge, but now there is enough Strife to keep them from being glued together
in strange ways. This is the balance of Strife and Love that exists now in the cosmos. However, we should not get too comfortable with this current mixture of elements and forces: the blender is always turned on, and the life cycle of the universe moves back and forth between extremes of unity and diversity. As time progresses, sometimes Love will again sink to the bottom of the blender, then Strife, and so on for eternity.

Anaxagoras: Mind and the Divisibility of Material Ingredients

Anaxagoras (500–428 BCE) held that the world is comprised of infinitely divisible portions of elements that are set in motion by a cosmic Mind. Anaxagoras was born into a wealthy family from the Ionian city Clazomenae (near Miletus), and eventually abandoned his inheritance to devote himself to philosophy. He was a student of Anaximenes (the third of the founding philosophers from Miletus). For around 20 years he lived and taught in the city of Athens. While there, he stated that the sun was just a mass of burning iron, and not a divine being as mythologists claimed. For this act of irreligion he was sentenced to death, although he was ultimately punished with exile. When he first heard of his sentence by the Athenian court, he said “Nature has long since condemned both them and me.” After relocating to a new city, the citizens there held him in high regard and upon his death put the following inscription on his tomb: “Here lies Anaxagoras, who reached for truth, the farthest bounds in heavenly speculations.”

Being a pluralist like Empedocles, Anaxagoras also held that the cosmos is composed of several material ingredients, and not just a single one. Also like Empedocles, he held that all of the ingredients swirl around in a cosmic blender, and create individual things like rocks and trees as they move around. Here, though, is where his similarities with Empedocles end. There are four major themes to Anaxagoras’s philosophy, the first of which is that the material ingredients of the cosmos exist in a completely vacuumless environment (that is, a *plenum*—a term that means the opposite of vacuum). While today we assume that material things float in empty space, Anaxagoras denied this, maintaining that all the material stuff swirling around in the cosmic blender is packed solid, with no empty areas. The second feature of his theory is that things are infinitely divisible. That is, if you take a material thing and divide it in half, then that part in half, you can keep doing this on to infinity. He makes his point here:

All things were together, infinite both in amount and in smallness, for the small, too, was infinite. And because all things were together, nothing was distinguishable on account of its smallness; for air and aether covered all things, both being infinite, for these are the most
important [ingredients] in the total mixture both in number and in size. [DK]

The third feature of this view is encapsulated in his statement that “A portion of everything is in everything”. For the sake of clarity, let’s suppose that there are four main material ingredients in the cosmic mix, namely earth, air, fire and water (Anaxagoras’ surviving writings do not contain a clear list of elements). Let’s say that the rock in my front yard is composed of 97% earth, 1% air, 1% fire, and 1% water. No matter how small of a piece of the rock I examine, it will contain the same portions of these four material ingredients. In each piece I examine, earth will predominate, and thus give it its characteristic of rock-like solidity. Similarly, a glass of wine might contain 97% water, 1% earth, 1% air, and 1% fire, and so too with every microscopic drop of wine that I examine. Anaxagoras describes his view of portions here:

Since the portions of the great and of the small are equal in amount, for this reason, too, all things will be in everything. Nor is it possible for them to be apart, but all things have a portion of everything. Since it is impossible for there to be a least thing, they cannot be separated, nor come to be by themselves. They must be now, just as they were in the beginning, all together. In all things many things are contained, and an equal number both in the greater and in the smaller of the things that are separated off. [DK]

Thus, within the giant cosmic blender, portions of all the material ingredients are spread throughout the mix, and the variety of things that we see in the world around us is already contained within the primordial mix. This, according to Anaxagoras, helps explain how things change. When a piece of wood disintegrates into earth, the elements of earth were already embedded within it. When the wood ignites into fire, the fire was already embedded within it. The fourth main feature of his theory is that Mind is the external force that accounts for all the motion, growth and change that occurs within the material ingredients. Mind is the motor that causes the giant blender to churn the mixture of stuff. He writes, “All things were mixed up together; then Mind came and arranged them all in distinct order." Mind for Anaxagoras performs much the same function that Love and Strife perform for Empedocles. He describes its function in the following:

Mind has power over all things, both greater and smaller, that have life. Mind had power over the whole revolution, so that it began to revolve in the beginning. It began to revolve first from a small beginning; but the
revolution now extends over a larger space, and will extend over a larger still. All the things that are mingled together and separated off and distinguished are all known by Mind. [DK]

In the above Anaxagoras maintains that Mind begins by making swirls within small areas of the mix, and this slowly passes to larger areas.

In short, the primary function of Mind is to initiate motion within the cosmic mix of material ingredients. To that extent, it functions as a force of physics. But is it anything more than this? Anaxagoras also seems to suggest that Mind has a partly divine function; but to the extent that it is divine, it is not an anthropomorphized god like Zeus or some other divine being of religious devotion. While we may like to know more about the kind of thing this Mind is, Anaxagoras does not provide the details. In fact, Aristotle criticizes Anaxagoras for inventing the notion of Mind as an artificial crutch to prop up his theory. Aristotle writes, “When Anaxagoras cannot explain why something is necessarily as it is, he drags in Mind, but otherwise he will use anything rather than Mind to explain a particular phenomenon” (Aristotle, *Metaphysics*, 985a18).

In any case, with his two-pronged theory of material stuff on the one hand, and Mind on the other, Anaxagoras holds the honor of being the first matter/spirit dualist in Western philosophy. That is, according to Anaxagoras’s dualism, there are two radically distinct types of things in the cosmos—matter and Mind—each of which performs its unique role in creating the universe and all that it contains.

F. ATOMISTS

The next important advance in Presocratic philosophy was a theory called Atomism. While most of the previous theories about the universe that we’ve examined so far have been rather strange, Atomism is different in that its essential features are the ones that we hold today. Its central thesis is that the world is composed of indivisible particles called atoms that exist within empty space. Everything contained in the universe, then, results from the clumping together of these atomic particles. It is tempting to think that the originators of this theory had a special insight into the nature of the physical world, but the reality is that it was just a lucky guess. There was no scientific equipment at the time that could prove or disprove any proposed theory of the cosmos. The Presocratic philosophers were all insatiably curious about the nature of things and stretched their imaginations to the farthest limits, proposing every conceivable explanation. With such a diversity of ideas being explored, one was bound to get it right, and it turned out to be Atomism. However, it took
over 2,000 years for civilization to realize this, and when physicists of the 20th century finally discovered what they believed was the tiniest particle of matter, they named it the atom, in honor of this Presocratic theory.

Two Presocratic philosophers are associated with the theory of Atomism: Leucippus, who proposed the theory, and his student Democritus who systematized it. Very little is known about Leucippus’ life, but he is reported to have been a student of Zeno, and may have come from the city of Elea, home of both Parmenides and Zeno. He wrote a work called *The Great World System*, none of which survives in itself, although its contents may have been incorporated into the writings of Democritus, who we do know much more about. Democritus (460-350 BCE) was from the Greek coastal city of Abdera (now in modern-day Greece). Born into a wealthy family, he was tutored by Persian astronomers, and, after his father’s death, traveled extensively learning what he could. At some point he became a student of Leucippus as well as the Pythagoreans and perhaps also of Anaxagoras. He secluded himself from the public, but nonetheless became famous for his knowledge of natural phenomena and the ability to predict the weather. One story reports that he met with Socrates in Athens, without revealing to Socrates who he was. A prolific writer, he composed dozens of works in the areas of ethics, physics, astronomy, mathematics, and music, none of which, unfortunately, survive. His lasting fame in philosophy, though, is his development of Leucippus’ atomism.

**Atoms in the Void**

The central notion of atomism is that the universe is composed of an infinite number of atoms that are dispersed throughout an infinite vacuum of empty space (or “void”), with no beginning in time. This is the exact opposite of Anaxagoras’s position in two important ways. First, Anaxagoras argued that matter was infinitely divisible. That is, if you take a rock, break it in half, then that in half, and so on, you will never arrive at a smallest piece. You could in theory keep splitting that thing in half for ever. Atomism denies this: if you keep breaking apart the rock, eventually you’ll arrive at a tiny component—an atom—that cannot be broken down any further into smaller pieces. Second, Anaxagoras argued that the cosmos is a vacuumless plenum: it contains no empty space and even the tiniest area is jam-packed with material stuff. Atomism also denies this: atoms exist in a vacuum of empty space. Their reasoning is that if there was no empty space, then things would be so squeezed together they couldn’t move.

According to Leucippus and Democritus, the atoms themselves have several features. Each atom is of the same substance, colorless, ungenerated, indestructible, unalterable, homogeneous, solid, and indivisible. Their shapes
and sizes have infinite variations, and they are spread throughout the universe. They are also continually moving, or at least vibrating, within the vacuum of empty space. While in motion, they collide with each other, and, when they do, sometimes they rebound, other times they join together and form compound bodies that we are able to perceive through our senses. An early philosopher describes this view of the atomists here:

Substances are unlimited in multitude and atomic … and scattered in the void. When they approach one another or collide or become entangled, the compounds appear as water or fire or as a plant or a human. But all things are atoms, which he calls forms; there is nothing else.
[Plutarch, against Colotes]

Differences in objects result from changes in the shape, arrangement, density, and position of the atoms.

**The Mind as Material**

It’s one thing to account for the composition of rocks and other inanimate objects in terms of material atoms clumped together. However, Leucippus and Democritus argue that *everything* in the universe is composed of the material stuff of atoms, including conscious human beings; there are no non-physical spirits or souls, or gods. In philosophy this is a position called *materialism*—only material things exist—and the challenge of materialism is to explain how conscious thought in humans can be a purely material thing. Throughout much of history, philosophers argued that this was impossible, and that human thought could only take place in a non-physical soul or spirit. After all, conscious thoughts do not seem to be the kinds of things that take up physical space. They are not like three-dimensional rocks and trees. But the atomists argued that conscious thoughts are indeed material, very much like rocks and trees.

While minds are material, they are rather unique material things, and the Atomists explained them with two special kinds of atoms: *fire-atoms* and *image-particles*. First, human minds are composed of fire-atoms that are distributed throughout the human body; think of them as a type of perceptual tissue, sort of like the role that today we give neurons. Second, all visible objects emit tiny image-particles which fly off in all directions. (The concept of the image-particle is often translated “idols” from the Greek word *eidola* which Democritus used). With the thickness of only one atom, the image-flakes preserve the shape of the original object. A rock, for example, continually sheds image-flakes, which have the shape of the rock itself. I mentally perceive the rock, then, when the image-flakes strike my eye and
excite my fire-atoms. One early philosopher describes this aspect of the atomist theory here:

[Leucippus and Democritus] attributed sight to certain image-flakes, of the same shape as the object, which were continually streaming off from the objects of sight and impacting the eye. [DK]

The mental act of thinking is a more focused form of perception. Some places in my body that contain fire-atoms are so densely compressed that image-flakes excite motion in them as they pass through them; hence, thought arises.

In addition to explaining human thought, another challenge of materialism is explaining the nature divine beings such as God that are traditionally thought to be non-material spirits. The atomists had a physical explanation of these too. Some image-flakes are very large, and appear in the shape of humans, which we perceive in our dreams. An early philosopher provides this summary of Democritus’s view of the gods:

Democritus says that certain image-flakes of atoms approach humans, and of them some cause good and others evil… These are large and immense, and difficult to destroy though not indestructible. They indicate the future in advance to people when they are seen to emit voices. As a result people of ancient times, upon perceiving the appearances of these things, supposed that they are a god, though there is no other god aside from these having an indestructible nature. [Sextus Empiricus, Mathematicians. 9:19]

The gods, then, are not spiritual beings that reside on mount Olympus: they are only strange image-flakes that excite our imaginations. This essentially amounts to a denial of the existence of God, which is a rather controversial side effect of atomism’s materialism.

Another controversial side effect of materialism is a view called determinism: all events are determined according to the strict laws that govern the operations of material things. Since, according to materialism, human beings are composed only of material stuff, then all human actions are also determined—hence there is no free will. We see this in the following statements about Democritus by two early philosophers,

[Democritus held that] everything that happens, happens of necessity. Motion is the cause of the production of everything, and he calls this necessity. [Diogenes Laertius, Lives, “Democritus”]
Democritus, the author of the Atomic Philosophy, preferred admitting the necessity of fate to depriving indivisible bodies of their natural motions. [Cicero, *On Fate*, 10]

According to atomism, then, all human actions are determined by the laws that govern the movement of atoms. We noted already how atomism foreshadowed the general makeup of the universe held by modern physicists. Similarly, their commitment to materialism and determinism foreshadows views that dominate contemporary philosophy of mind. Nevertheless, in its time it was just one of many Presocratic theories battling with its rivals for attention.

**G. SOPHISTS**

A final group of Presocratic philosophers are the *Sophists* (Greek for “wise ones”), a collection of traveling freelance teachers with a reputation for skepticism. They journeyed around the Greek region, but were frequently in Athens, Greece’s greatest city, and sometimes functioned as political representatives from their home towns. At the time they filled an important educational function. In the absence of any public schools, parents’ options were limited when it came to educating their children. The two common choices were for fathers to train their own sons in the family business, or to find tradesman nearby who would take on their son as an apprentice. Sophists offered a third alternative, which was particularly attractive for wealthy families. Sophists claimed to be able to teach anything and they charged a fee for their services. They were particularly good at rhetoric and politics, which appealed to parents who wanted their sons to be civic leaders.

If the Sophists were merely teachers-for-hire, this would be nothing remarkable. The reality, though, is that much of their teaching was controversial and touched on important philosophical themes. First, like other Presocratic philosophers, they advocated a naturalistic world view in place of the traditional and older mythological world view. This served to undermined traditional moral and religious values of the children they were instructing. Second, many Sophists taught their students an arguing technique called *antilogic*, which involved arguing both sides of a case as strongly as possible. For example, a book titled *Twofold Arguments*, written by an anonymous Sophist, compiles arguments pro and contra on ethical issues, such as moral goodness, honor, justice, and whether virtue can be taught. The result of teachings like these was that Sophists were accused of undermining the very notion of truth by making the weaker argument appear the stronger. Third, there was an ongoing debate among the Presocratic philosophers whether so-called facts about the world are simply matters of human convention or matters of nature—
custom versus nature. The Sophists often defended the “custom” position, especially in matters of ethics and political systems.

Because of these controversial components of their teaching, eventually the word “sophist” became a term of contempt for someone who reasons subtly but deceitfully. Among the many Sophists teaching throughout the Greek world at the time, the most renowned were Protagoras and Gorgias.

**Protagoras: Relativism**

Protagoras (c. 490–c. 420 BCE), the most famous of the Sophists, is remembered for his relativist statement that “man is the measure of all things.” Like Democritus, Protagoras was from the coastal city of Abdera (now in modern-day Greece), and may have even studied with the former. In Protagoras’ travels as a teacher, he spent several years in Athens, and legend has it that because of his irreligious teachings he was exiled from that city and his books were burned. An early philosopher describes Protagoras’s accomplishments, which succinctly embodies the questionable reputation of all the Sophists:

> He was the first person who demanded payment of his pupils…. and who instituted contests of argument, and who armed the disputants with the weapon of sophism. It was also he who first left facts out of consideration, and fixed his arguments on words, and who was the originator of the present superficial and futile kinds of discussion. On this matter Timon says of him, “Protagoras, that slippery arguer, in disputatious contests fully skilled.” [Diogenes, *Lives*, “Protagoras”]

He authored books on many topics, from rhetoric to wrestling. Protagoras died, as one story relates, on a voyage to Sicily when the ship wrecked.

There are two philosophically important elements of Protagoras: his relativism and his religious agnosticism. His famous statement of relativism in its more complete form is “Man is the measure of all things: of existing things that they exist; of non-existing things that they do not exist.” His general point is that the truth of *all* judgments is relative to our human thinking; that is, human preference is the standard by which we judge everything. But this may be understood two different ways. On the one hand, it could mean that all judgments are relative to the individual: each person is the measure of all things. For example, my judgment that honey is sweet makes it true that honey is sweet. On the other hand, it could mean that all judgments are relative to our culture: human society is the measure of all things. For example, society’s assessment that honey is sweet makes it true that honey is sweet. While it’s not clear whether Protagoras had in mind individual or cultural relativism, he is
nevertheless at the forefront of a long tradition of relativism that champions both of these types.

But perhaps the most significant part of his famous statement involves the second half, which maintains that humans are the ultimate standards “of existing things, that they exist; of non-existing things, that they do not exist.” This implies that his relativism is not just about how honey tastes to us, or even ethical matters such as the kinds of actions that we find good or bad. It also extends to truths about the physical world itself: whether or not the rock in front of me actually exists is also dependent upon human beings – either an individual perceiver or a social convention. We’ve already noted Xenophanes’ commitment to some form of relativism, but Protagoras’ position is more sweeping because it extends to the most fundamental judgments about what does or does not exist.

Concerning Protagoras’s religious agnosticism, this is expressed in a lone quotation that reportedly appeared as the opening statement in one of his books:

Concerning the gods, I am unable to know either that they exist or that they do not exist or what form they have. For there are many obstacles to knowledge: the obscurity of the matter and the brevity of human life. [DK]

Technically, he is not denying the existence of the gods, the position of atheism. Rather, he is denying the capacity to know anything about the gods whatsoever, as expressed in the very term “agnosticism” which literally means “no knowledge.

**Gorgias: Skepticism**

Gorgias (c. 483-375 BCE), the second most famous Sophist, is remembered in philosophy for his skeptical positions on ethics and knowledge. Born in the city of Leontini on the island of Sicily, Gorgias was a student of Empedocles and attracted attention when at around age 60 he went to Athens as a political ambassador where he delivered public lectures to much acclaim. He was the first to give unrehearsed lectures on any subject that someone in the crowd might suggest, in which he demonstrated his encyclopedic range of knowledge. With his reputation on the rise, he remained in Athens and accumulated students among the rich and powerful. In time he himself became quite wealthy and, prior to his death at over 100 years of age, he had a gold statue of his image placed in a temple.

Gorgias was foremost a teacher of rhetoric and argumentation, and did not aim to teach moral or political virtue. However, some of his writings that
were largely exercises in argumentation flirted with skepticism by taking a seemingly absurd position and defending it with persuasive force. For example, one book, titled *In Praise of Helen of Troy* defends Helen’s acts of adultery, thereby conveying a kind of ethical skepticism. Today this might not strike us as being particularly controversial, but it might be like arguing for the view that Hitler was a really nice guy. Even if it was just a rhetorical exercise in argumentation, it crosses an important line of ethical protocol.

Even more dramatically, a book of his titled *On Not Being* argues for three absurd positions: that (1) nothing exists; (2) if anything exists, it cannot be known; and (3) if anything can be known, it cannot be communicated. While his book no longer survives, summaries of his main line of argumentation do survive, and they exhibit a similar kind of philosophical reasoning that we’ve seen in Parmenides. Regarding his first claim, that nothing exists, Gorgias argues as follows:

If what-is is eternal, it is unlimited, but if it is unlimited it is nowhere, and if it is nowhere it is not. So if what-is is eternal, it is not at all. Further, what-is cannot be generated either. For if it has come to be it did so either from a thing that is or from a thing that is not. But it has come to be neither from what-is (for if it is a thing that is, it has not come to be, but already is), nor from what-is-not (for what-is-not cannot generate anything, since what generates anything must of necessity share in existence). … It follows that nothing is. For if neither what-is is nor what-is-not nor both, and nothing aside from these is conceived of, nothing is. [Sextus Empiricus, *Against the Mathematicians*, 7.65 ff.]

According to the above reasoning, existence can only be of two types: it is either eternal or it is created. But eternal existence is impossible since it would be unlimited and, thus, exist nowhere. Further, created existence is impossible since nothing is there to create it. Therefore, nothing exists.

His next point is that if anything does exist, we can’t know it, as summarized here:

Things seen are the objects of sight, and things heard are the objects of hearing. We accept things as real when we see them without hearing them and vice versa. So we would have to accept things as real when we think about them without seeing or hearing them. But this would mean believing in things like a chariot racing on the sea. Therefore reality is not the object of thought, and cannot be comprehended by it. [Ibid]
According to the above, we have several ways of perceiving things, and each is its own authority, independent of others. For example, I hear a dog barking and I accept its reality without seeing it. However, with my mental faculty of conception I can perceive something impossible, like a chariot racing on the sea. Since this faculty of perception is its own authority, it undermines the reliability of all types of perception which conflict with it. It thus makes our knowledge of existence impossible.

Finally, he argues that if anything can be known, it cannot be communicated, which is summarized here:

Speech can never exactly represent perceptible things, since it is different from them, and perceptibles are apprehended each by the one kind of organ, speech by another. Therefore if anything exists and is comprehended, it is incommunicable. [Ibid]

Gorgias’s point in the above is that there is a big gap between the sensory mechanisms by which we perceive external things, and the mental mechanisms by which we communicate through speech. They are each in their own realms, and because of this our speech has no real connection with the things that we perceive. Thus, if anything can be known, it cannot be communicated.

H. CONCLUSION

It is appropriate that this chapter end with the skeptical views of the Sophists. The Presocratic philosophers before them showed a remarkable amount of creativity as they tried to offer rational explanations of the physical world around them. Thales and his countrymen attempted to arrive at the fundamental stuff from which all physical things are made, suggesting that it might be water, the unbounded, or air. Others tried to find the unifying forces behind all change, suggesting that it might be fire, mathematical relations, forces of love and strife, and Mind. While this kind of intellectual creativity is all well and good, there comes a point that a reality check is needed, and the Sophists provided just that. Just because a theory is interesting, that by itself doesn’t mean it’s correct. Just because an argument is well structured and looks compelling, that doesn’t mean that its conclusion is correct. There’s no better illustration of that than Gorgias’s arguments in On Not Being, which are every bit as compelling as Parmenides’ arguments for the One. Gorgias recognized, though, that his argument was just an act of mental gymnastics. For the Sophists, argumentation is aimed at persuading people, not necessarily at discovering truth. The skeptical message of the Sophists is that we need to view
philosophical and religious theories with suspicion. We also need to recognize
the power that well-crafted arguments can have on us, for both good and ill.

But the skepticism of the Sophists is not an end in itself. People have a
built-in need to ask big questions like “where did everything come from,” and
then offer far reaching answers to those questions. The next round of great
philosophers – Socrates, Plato and Aristotle – offered some of the boldest and
most influential views imaginable. All the while, though, the skepticism of the
Sophists lurked in the shadows as a force that they had to reckon with.

Works Cited
Quotations in this chapter designated by “DK” are adapted from various
English translations of the Presocratic fragments, which in turn are based on
original Greek source material compiled by Hermann Diels and Walther Kranz
in Die Fragmente der Vorsokratiker (Zurich: Weidmann, 1985). In some cases
I have included the citations of the original Greek sources, particularly when
they are from Plato, Aristotle, or some other prominent classical philosopher.
Much of the biographical information on the Presocratics comes from Diogenes
Laertius (3rd cn. BCE), The Lives and Opinions of Eminent Philosophers,
available various translations.