



CHAPTER 2: THE PRE-SOCRATICS

Main Points

1. **Epistemology** is the branch of philosophy concerned primarily with the nature, sources, limits, and criteria of knowledge. In the history of philosophy, epistemology and metaphysics have been intimately connected.
2. “**Metaphysics**,” the term, in its original meaning refers to those untitled writings of Aristotle “after the *Physics*” that deal with subjects more abstract and difficult to understand than those examined in the *Physics*.
3. The fundamental question of Aristotle’s metaphysics, and therefore of metaphysics as a subject, is *What is the nature of being?* However, this question was asked before Aristotle, so he was not the first metaphysician. In addition, it has admitted a variety of interpretations over the centuries, though for most philosophers it does not include such subjects as astral projection, UFOs, or psychic surgery.
4. The first Western philosophers are known collectively as the **pre-Socratics**, a loose chronological term applying to those Greek philosophers who lived before Socrates (c. 470–399 B.C.).
5. The thinking of these early philosophers ushered in a perspective that made possible a deep understanding of the natural world. Advanced civilization is the direct consequence of the Greek discovery of mathematics and the Greek invention of philosophy.

The Milesians

6. **Thales** conceived and looked for (and is said to be the first to do so) a basic stuff out of which all is constituted. He pronounced it to be water.



7. Thales also introduced a perspective that was not mythological in character. His view contributed to the idea that nature runs itself according to fixed processes that govern underlying substances.
8. **Anaximander** thought the basic substance must be more elementary than water and must be ageless, boundless, and indeterminate.
9. **Anaximenes** pronounced the basic substance to be air.

Pythagoras

10. **Pythagoras** is said to have maintained that things are numbers, but, more accurately (according to his wife Theano), Pythagoras meant that things are things because they can be enumerated. If something can be counted, it is a thing (whether physical or not).
11. For Pythagoras, there is an intimacy between things and numbers. Things participate in the universe of order and harmony. This led to the concept that fundamental reality is eternal, unchanging, and accessible only to reason.

Heraclitus and Parmenides

12. For **Heraclitus**, the essential feature of reality is fire, whose nature is ceaseless change determined by a cosmic order he called the *logos*, through which there is a harmonious union of opposites. Such ceaseless change raises the **problem of identity** (can I step into the same river twice?) and the **problem of personal identity** (am I the same person over a lifetime?)
13. **Parmenides** deduced from **a priori principles** that being is a changeless, single, permanent, indivisible, and undifferentiated whole. Motion and generation are impossible, for if being itself were to change it would become something different. But what is different from being is non- being, and non-being just plain isn't.



Empedocles and Anaxagoras

14. **Empedocles**, reconciling the views of Heraclitus and Parmenides, recognized change in objects but said they were composed of changeless basic material particles: earth, air, fire, water. The apparent changes in the objects of experience were in reality changes in the positions of the basic particles. He also recognized basic forces of change, love, and strife.
 15. **Anaxagoras** introduced philosophy to Athens and introduced into metaphysics the distinction between matter and mind. He held that the formation of the world resulted from rotary motion induced in mass by mind = reason = *nous*.
 16. Mind did not create matter, but only acted on it, and did not act out of purpose or objective.
- Unlike Empedocles, Anaxagoras believed matter was composed of particles that were infinitely divisible.

The Atomists

17. **Leucippus** and **Democritus**: All things are composed of minute, imperceptible, indestructible, indivisible, eternal, and uncreated particles, differing in size, shape, and perhaps weight. Atoms are infinite in number and eternally in motion.
18. The Atomists distinguished inherent and noninherent qualities of everyday objects: color and taste are not really “in” objects, but other qualities, such as weight and hardness, are.
19. The Atomists held that because things move, empty space must be real.
20. The Atomists were **determinists**. They believed that atoms operate in strict accordance with physical laws. They said future motions would be completely predictable for anyone with enough knowledge about the shapes, sizes, locations, directions, and velocities of the atoms.
21. The common thread of the pre-Socratics: all believed that the world we



experience is merely a manifestation of a more fundamental, underlying reality.

Boxes

The Nature of Being?

(Some of the various questions a philosopher might have in mind when he or she asks the question)

Profile: Pythagoras

(Remembered for the Pythagorean Theorem, actually discovered earlier by the Babylonians)

On Rabbits and Motion

(Two of Zeno's ant motion arguments explained)

Mythology

(The legacy of ancient myths)

Lecture and Discussion Ideas Related to Selected Questions

6. A note on Parmenides and the Atomists.

For Parmenides, the only alternative to being was non-being (nonexistence), so that if being itself could undergo change of any kind (that is, could be different in some way from what it was originally), the only way for being to be different would be for it not to exist.

But that is logically absurd, for being cannot be and not-be at the same time. Thus, it is impossible for being to change.



The Atomists used the idea of a “void” (the Greek word is *kenon*, the Latin word *vacuum*) to give “room” for things (atoms) to undergo change. But empty space was also real.

A helpful way to understand this is to note that while the void was “nothing” (no-thing), it was not non-being. So for the Atomists both things and no-things existed: both had being (as opposed to non-being). A comparison of the two views appears below.

Parmenides and the Atomists Compared

Parmenides	
BEING IS	NON-BEING IS NOT
Atomists	
BEING Thing (Body) No-Thing (Void) IS	NON-BEING IS NOT

Source: Unknown

8. “*The behavior of atoms is governed entirely by physical laws.*” “*Humans have free will.*” *Are these statements incompatible? Explain.*

We don’t believe they ever invented a beginning philosophy student who doubted free will. So regardless of your own views on the subject, it can’t hurt to argue against the idea. If it does nothing else, it will help students to see that the idea that we have free will is not the self-evident thing that it seems. Chapter 17 discusses the problem of Free Will in depth, so you may want to postpone detailed discussion until then.

A good way to begin is by stipulating that Smith has free will if and only if it was physically possible for her to have acted differently in the same circumstances. Hence: If she has free will then it was physically possible



for the atoms in the parts of her body that moved when she acted to have moved differently in the same circumstances. And if the atoms could have moved differently in the same circumstances, then they are not governed by physical laws. So, if they are governed, then she doesn't have free will.

Possibly someone will ask, and even if nobody does ask the subject should be brought up anyway, why it is that, if it were possible for something physical to have behaved differently in the same circumstances, then it was not governed by physical law. The answer is that that's what it is to be governed by physical law. Take a simple law, for example, water boils at 100 degrees Celsius. What it means to say that that is a law is that if you raise the temperature of some water to 100 degrees it will boil. If you could raise the water to 100 degrees without its boiling, then it wouldn't be a law that water boils at that temperature.

A rejoinder might be—and few students will raise it, though you might—that it is consistent with the idea that the activity of *subatomic entities* is governed by physical laws that there are “uncaused events” in the subatomic realm, and that therefore a subatomic entity could have behaved differently in exactly the same circumstances even though it is governed by physical laws. It might then further be suggested that if subatomic entities could have behaved differently in the same circumstances while being governed by physical laws, then so could atoms and larger things, such as Smith's arms and legs, since subatomic entities exist in these atoms and larger things.

However, let's set aside the scientific controversies involved in this rejoinder and suppose that the atoms in Smith's arms, while being governed by physical laws, could have moved differently due to the “uncaused” activity of internal subatomic entities. The point is, so what? True, it would follow that Smith has free will, as defined above, for she could have acted differently in the same circumstances (at least her body parts could have moved differently). But if she had acted differently, it would have been due to the “uncaused activity” of subatomic particles within her body, and not due to *her*.



This is a good place to bring forth the old dilemma: Either your act was caused, or it wasn't. If it was, then it couldn't have *not* happened. And if it wasn't, then *you* didn't cause it. Either way, you can't be held to account for your act.

Philosophers' Principal Works

Thales (c. 640–546 B.C.)

Anaximander (c. 610–547 B.C.)

On the Nature of Things

Anaximenes (fl. c. 545 B.C.)

Pythagoras (c. 580–500 B.C.)

Theano of Croton (sixth century B.C.)

On Piety

Heraclitus (c. 535–475 B.C.)

Parmenides (fifth century B.C.)

Zeno (c. 489–430 B.C.)

Empedocles (c. 490–430 B.C.)

On the Nature of Things

Purifications

Anaxagras (c. 500–428 B.C.)

Democritus (460–370 B.C.)

Little World System

On Nature

In the Nature of Man

Leucippus (mid-fifth century B.C.)

On Mind