PHILOSOPHY OF SCIENCE
BARUCH SPINOZA (1632–1677)
PHILOSOPHY OF RELIGION
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INTRODUCTION

What Is Philosophy?

The very question sounds philosophical, doesn't it? But what exactly does that mean? What *is* philosophy?

The word *philosophy* means "love of wisdom." Indeed, it is a love of wisdom that guides philosophers to explore the fundamental questions about who we are and why we're here. On the surface, philosophy is a social science. But as you read this book, you'll discover that it is so much more than that. Philosophy touches on every subject you could possibly think of. It's not just a bunch of old Greek guys asking each other questions over and over again (though it has its fair share of that as well). Philosophy has very real applications; from the ethical questions raised in government policy to the logic forms required in computer programming, everything has its roots in philosophy.

Through philosophy, we are able to explore concepts like the meaning of life, knowledge, morality, reality, the existence of God, consciousness, politics, religion, economics, art, linguistics—philosophy has no bounds!

In a very broad sense, there are six major themes philosophy touches on:

1. **Metaphysics:** The study of the universe and reality
2. **Logic:** How to create a valid argument
3. **Epistemology:** The study of knowledge and how we acquire knowledge
4. **Aesthetics:** The study of art and beauty
5. **Politics:** The study of political rights, government, and the role of citizens

6. **Ethics:** The study of morality and how one should live his life

If you've ever thought, "Oh, *philosophy*. I'll never be able to understand *that* stuff," then fear not. This is the crash course in philosophy that you've always wanted. Finally, you'll be able to open your mind without making your eyes bleed.

Welcome to Philosophy 101.

PRE-SOCRATIC

The origins of Western philosophy

The roots of Western philosophy can be found in the work of Greek philosophers during the fifth and sixth centuries. These philosophers, later referred to as pre-Socratic, started to question the world around them. Rather than attributing their surroundings to the Greek gods, these philosophers searched for more rational explanations that could explain the world, the universe, and their existence.

This was a philosophy of nature. Pre-Socratic philosophers questioned where everything came from, what everything was created from, how nature could be described mathematically, and how one could explain the existence of plurality in nature. They sought to find a primary principle, known as *archê*, which was the basic material of the universe. Due to the fact that not everything in the universe looks the same or remains in the same exact state, pre-Socratic philosophers determined that there must be principles of change that the *archê* contained.

WHAT DOES PRE-SOCRATIC MEAN?

The term *pre-Socratic*, meaning “before Socrates,” was popularized in 1903 by German scholar Hermann Diels. Socrates was actually alive during the same time as many of the pre-Socratic philosophers, and therefore the term does not imply that these philosophies existed prior to those of Socrates. Rather, the term *pre-Socratic* relates to the difference in ideology and principles. While many pre-Socratic philosophers produced texts, none have fully survived and most of what we understand about the pre-Socratic philosophers is based on the fragments of text that remain and the quotes of later historians and philosophers, which were usually biased.

IMPORTANT PRE-SOCRATIC SCHOOLS

The Milesian School

The first pre-Socratic philosophers existed in the city of Miletus, along the western coast of Anatolia (modern Turkey). From Miletus came three important pre-Socratic philosophers: Thales, Anaximander, and Anaximenes.

Thales

One of the most important pre-Socratic philosophers, Thales (624–546 b.c.), claimed the *archê*, or the single element, was water. Thales determined that water could experience principles of change like evaporation and condensation, therefore allowing for it to be gaseous or solid. He also knew that water was responsible for moisture (which heat was generated from) and nourishment. Thales even believed the earth floated on water.

Anaximander

Following Thales, the next major philosopher to come out of Miletus was Anaximander (610–546 b.c.). Unlike Thales, Anaximander claimed the single element was actually an undefined, unlimited, and indefinite substance, known as *apeiron*. From this, opposites like moist and dry and cold and hot separated from each other. Anaximander is known for being the first philosopher that we know of to have left writings of his work.

Anaximenes

The last important pre-Socratic philosopher of the Milesian school was Anaximenes (585–528 b.c.), who believed the single element was air. According to Anaximenes, air is everywhere and has the ability to undergo processes and become transformed into other things, such as water, clouds, wind, fire, and even the earth.

The Pythagorean School

Philosopher and mathematician Pythagoras (570–497 b.c.), perhaps most famous for the Pythagorean theorem named after him, believed that the basis of all reality was mathematical relations and that mathematics governed everything. To Pythagoras, numbers were sacred, and with the use of mathematics, everything could be measured and predicted. The impact and image of Pythagoras was astounding. His school was cult-like, with followers listening to his every word … and even his strange rules, which covered anything from what and what not to eat, how to dress, and even how to urinate. Pythagoras philosophized on many areas, and his students believed that his teachings were the prophecies of the gods.

The Ephesian School

The Ephesian school was based on the work of one man, Heraclitus of Ephesus (535–475 b.c.). Heraclitus believed that everything in nature is constantly changing, or in a state of flux. He is perhaps most famous for his notion that one cannot step in the same river twice. Heraclitus believed that the single element was fire and that everything was a manifestation of fire.

The Eleatic School

The Eleatic school was based in Colophon, an ancient city not far from Miletus. From this region came four important pre-Socratic philosophers: Xenophanes, Parmenides, Zeno, and Melissus.

Xenophanes of Colophon

Xenophanes (570–475 b.c.) is known for his critique of religion and mythology. In particular, he attacked the notion that the gods were anthropomorphic (or took a human form). Xenophanes believed there was one god that, while it did not physically move, had the ability to hear, see, and think, and controlled the world with his thoughts.

Parmenides of Elea

Parmenides (510–440 b.c.) believed reality didn’t have to do with the world one experienced and that it was only through reason, not the senses, that one would be able to arrive at the truth. Parmenides concluded that the work of earlier Milesian philosophers was not only unintelligible; they were asking the wrong questions to begin with. To Parmenides, it made no sense to discuss what is and what is not, for the only intelligible thing to discuss, and the only thing that is true, is what is (what exists).

Parmenides had an incredible impact on Plato and all of Western philosophy. His work led the school of Elea to become the first movement to use pure reason as the only criterion for finding truth.

Zeno of Elea

Zeno of Elea (490–430 b.c.) was Parmenides’ most famous student (and possibly his lover), who devoted his time to creating arguments (known as paradoxes) that defended Parmenides’ ideas. In Zeno’s most famous paradoxes, the paradoxes of motion, he attempted to show that ontological pluralism, the notion that many things exist as opposed to one, will actually lead to conclusions that are absurd. Parmenides and Zeno believed that reality existed as one thing, and that things like plurality and motion were nothing more than illusions. Though the work of Zeno would later be disproved, his paradoxes still raise important questions, challenges, and inspirations for philosophers, physicists, and mathematicians.

Melissus of Samos

Melissus of Samos, who lived around 440 b.c., was the last philosopher of the Eleatic school. Continuing the ideas of Parmenides and Zeno of Elea, Melissus of Samos distinguished between *is* and *seems*. When a thing *is* X, according to Melissus of Samos, it has to always be X (and never not X). Therefore, according to this idea, when something is cold, it can never stop being cold. But since this is not the case, and properties are not retained indefinitely, nothing

(except for the Parmenidean Real, reality existing as one continuous, unchanging thing) actually ever *is*; rather, it *seems*.

The Atomist School

The Atomist school, started by Leucippus in the fifth century b.c. and passed down by his student, Democritus (460–370 b.c.), believed that every physical object is made up of atoms and void (empty space that atoms move in) that are arranged in different ways. This idea is not too far from the concepts of atoms that we know today. This school believed that atoms were incredibly small particles (so small that they could not be cut in half) that differed in size, shape, motion, arrangement, and position, and that when put together, these atoms created what is seen in the visible world.

SOCRATES (469–399 B.C.)

The game-changer

Socrates was born in Athens, Greece, around 469 b.c. and died in 399 b.c. Whereas pre-Socratic philosophers examined the natural world, Socrates placed emphasis on the human experience. He focused on individual morality, questioned what made a good life, and discussed social and political questions. His work and his ideas became the foundation of Western philosophy. While Socrates is widely regarded as one of the wisest men to have ever lived, he never wrote down any of his thoughts, and all that we know about him is based on the written works of his students and contemporaries (mainly the works of Plato, Xenophon, and Aristophanes).

Because everything that we know about Socrates is based on accounts from others (which were often fictionalized) and these accounts differ, we do not actually know much about him or his teachings. This is known as the “Socratic problem.” From the texts of others, we are able to gather that he was the son of a stone mason and a midwife; he most likely had a basic Greek education; he was not aesthetically good-looking (during a time when external beauty was very important); he served in the military during the Peloponnesian War; he had three sons with a much younger woman; and he lived in poverty. He might have worked as a stone mason before turning to philosophy.

The one detail that has been well documented, however, is Socrates’ death. While Socrates was alive, the state of Athens began to decline. Having embarrassingly lost to Sparta in the Peloponnesian War, Athens had an identity crisis of sorts and became fixated on physical beauty, ideas of wealth, and romanticizing the past. Because Socrates was an outspoken critic of this way of life, he grew to have many enemies. In 399 b.c., Socrates was arrested and brought to trial with charges of being unreligious and corrupting the city’s youth. Socrates was found guilty and was sentenced to death by poisonous drink.