1. The Presocratics

Parthenes and the Logic of Being

Both the Milesians and the Pythagoreans developed a new scientific vision of reality, the Milesians inaugurating natural science based on empirical evidence, the Pythagoreans inaugurating mathematical sciences based on abstract concepts. Heraclitus introduced new considerations, when he reflected on the role that human perception plays in understanding the world, and the possibility that human knowledge is not objective at all, but relative to ever-changing concepts, perspectives, and changes in nature itself. The epitome of the Heraclitean vision seems expressed in the radical doctrine of fire and the related notion of the co-presence of opposites, the paradoxical idea that something can both have and not have the same property in different ways, both be and not be at the same time.

Parmenides of Elea (c. 530-450 BC) reacted sharply against this teaching: “They are carried along by experience, deaf as they are blind, amazed, uncritical herds, for whom to be and not to be are judged the same and not the same, and for whom there are in all things opposites.” Against the Heraclitean idea of the co-presence of opposites, Parmenides insists there is a rational basis of all truth and all being: “That it is and cannot not be is the path of truth.” And “In no way may this prevail, that things that are not, are.”

Parmenides’ insight—later called the principle of non-contradiction (PNC)—seems to most philosophers to the basis of rational thought. For if we try to imagine what it would mean, if some X could both be and not be, if X could both have and not have the same property Y (at the same time and in the same respect), then all rational inference breaks down. And yet we cannot prove the PNC is true, without using it to prove it—the fallacy of “begging the question.” The PNC is an ultimate principle of reasoning, like A = A (identity), which would not itself have any meaning, if A could also be not-A. (For example, if life both is and is not a dream, then it seems life both is and is not real. Then what is real is also not real, and vice-versa. Then there is no difference between real and not real, sameness and difference, being and nothingness, i.e. there is radical incoherence in thought and being.)

It follows that logic involves modality: whereas some things merely are or are not the case (p), other things must or cannot be the case, e.g. the logical implication of two true statements must be a true statement \( \Box (p \land (p \rightarrow q)) \rightarrow q \), whereas two contradictory statements cannot both be true \( \Diamond (p \land \neg p) \). The idea that some things must be or cannot be—the ideas of necessity and impossibility—constitute, in addition to identity, being and non-being, features
of the logical structure of thought, and of all proofs, such as are found in the mathematical sciences. The laws of mathematics are necessarily true.

In addition to being the grandfather of Greek logic, Parmenides also played an enormously influential role in all later Greek metaphysics. Whereas Heraclitus’ ultimate insight was to see “fire” i.e. change at the core of being, Parmenides insists “That it is and cannot not be is the path of truth” and goes on to indicate the basic metaphysical attributes of “what-is”: it is (i) un-generated, (ii) imperishable, (iii) whole, (iv) self-same, (v) unchanging, and (vi) complete or full, as well as (vii) known by reason, not the senses.

These attributes imply Parmenides is thinking of “what-is” as “always-being” or “eternal-being” and therefore as something that must be rather than as something that merely happens to be and could not be, an interpretation would help explain the otherwise puzzling logic: “That which is … must be. For it is possible for it to be; and it is not possible for nothing to be.” This argument is clearly false in relation to contingent beings which can cease to exist, e.g. cats or smiles. For these things “are” for a certain period of time, and later “are not.” But if what is is something that must be, it cannot cease to be.

The traditional interpretation of Parmenides presents him as a metaphysical monist: there is one, eternal, unchanging reality, which alone “is”—whereas the world of contingent, changing things, the world of appearances, “is not.” (Later Eleatics would identify “being” with Universe, Logos, Number, God, Soul, Atoms, even Truth.) On this view, Parmenides’ conception of reality is as follows:

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\begin{align*}
\text{Being} &= \text{Reality} \\
(\textit{arche, “origin” or “principle”}) \\
/ \\
\text{Becoming} &= \text{mere Appearances} \\
(\textit{ta phainomena, “appearing things”})
\end{align*}
\]

A more recent interpretation claims that Parmenides is not a monist who regards the world of appearances as illusory, but that he is offering a modal theory of being, and his conception of reality is:

\[
\begin{align*}
\text{Necessary Being} &= \text{Essential, Enduring Reality} \\
(\textit{arche, “origin” or “principle”}) \\
/ \\
\text{Contingent Being} &= \text{Changing World of Individuals} \\
(\textit{ta phainomena, “appearing things”})
\end{align*}
\]

On this view, Parmenides thinks that reality has both a necessary, universal structure (\textit{to on, “reality”}), which determines both what \textit{must} be (i.e. what is
necessary) together with what cannot be (i.e. is impossible), as well as the contingent, particular things and events that happen within it (ta phainomena, ‘appearances’).

Here we have again appearance vs. reality, but with an essential core or structure of an ever changing totality of phenomena, which are also real, if not enduring. “Necessary being” in this sense picks out those aspects of the world that are universal and unchanging, the Logos or “Essential Structure” found in reality. Obviously, a modal conception of reality would have been a powerful conceptual tool to help the ancient thinkers untangle what was meant and not meant by “what is.” This distinction is critical to natural science, for example, insofar it is concerned with causal laws and powers in nature—laws which describe things that must be in conformity with and cannot be opposed to the laws, e.g. when fire is mingled with paper in dry air, the paper must burn, given the nature of those elemental bodies or their underlying atomic structures.

It also seems possible that in claiming that “what is” is something that must be, Parmenides is thinking of what is not as the essence or inner structure of being, but as itself an entity or being—a necessary being, in contrast to thing that come to be and perish. Is this concept even coherent? Can we not imagine that anything that can be said to exist, whether it is the starry heavens or God or soul or number or whatever, can also not exist? And what are the implications of this concept? (For example, if we say that God is a necessary being, does that imply that God exists? It seems it must, since if God is defined as existing necessarily and we conceive of God as not existing, we are not conceiving of God! This and other puzzling consequences seem to follow from Parmenides’ concept of necessary existence.)

There is yet another consideration, when interpreting Parmenides’ notion of Being. For not only does “what-is” not change, according to Parmenides, it is not incomplete or anything less than fully present: “Remaining self-same in itself, being is what it is, and does not change; for it is contained by Necessity within the bonds of Limit; nor is it fitting for what is to be incomplete, for being cannot be lacking—or it would not be.” Thus understood, “what is” is associated not only with necessity and ever-enduringness (as might be found in laws of logic or of nature), but with fullness and goodness, i.e. with perfection. Plato would identify the ultimate source of all reality as the Good, the principle which solicited all beings toward unity, self-perfection and knowledge; medieval philosophers would identify Parmenidean Being with God, conceived of as Alpha/Creator and Omega/End of all things. Parmenides’ discussion of Being and its attributes—unity, necessity, eternity, perfection—shaped all later Greek metaphysics and philosophical theology. They all had to face the question: Is there an Eternal Perfect Being, or are all beings material and contingent?
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<td>1. Do you believe in ‘God’? Does your concept of God include the Parmenidean attributes of ‘being’—that God is one, non-corporeal, eternal, necessary, and perfectly good?</td>
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<td>2. Do you think there are necessary truths, i.e. such that they cannot not be true (e.g. laws of mathematics, or perhaps of morals)? How are they different from laws of nature?</td>
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**Zeno and Negative Logic**

Parmenides’ student, Zeno, was also drawn to the idea of logic as the basis for objective knowledge concerning the world, and to the idea that the senses offered subjective, contradictory and misleading evidence. Zeno pioneered the method of *negative dialectic*, which sought to prove logically, starting from his opponents’ own hypotheses, that they led to contradictory conclusions, and therefore had to be mistaken. (Socrates would make use of this method in his own “Socratic dialectic.”)

Zeno’s paradoxes, which he argued displayed the incoherence of the sensible world, include:

1. **The heap.** If a given number of grains of sand $n$ make a heap, it will not cease to be a heap, if one is taken away, $n-1$. From this one can conclude that if any given number of grains make a heap, so do all lower numbers, down to zero. Conversely, if $n$ grains are not a heap, neither are $n+1$, up to infinitely. Thus every collection of grains is and is not a heap.

2. **Paradoxes of motion**, e.g. the arrow, Achilles. If the arrow flies toward the target, it must pass through $\frac{1}{2}$ the distance, then $\frac{1}{2}$ of the remaining distance, etc. It never reaches the target. Likewise, Achilles will never catch the tortoise.

3. **Paradoxes of infinity.** Zeno argued that if the world or any part of it were composed of infinitely many atoms, it would be unlimited in size, which he thought impossible. (Suppose it is infinitely large; how could it be made bigger? But it seems anything can be made bigger by addition.) Likewise, if the world or any part of it were composed of infinitely small atoms, it would not be of any size, i.e. it would not exist.

   Consider time. Here is a Zeno-type argument used centuries later to prove the universe had to be finitely, not infinitely old (i.e. had to have come into being): Suppose a point in the infinite past, $t-1$, with time going infinitely backwards as it were. How would you ever traverse from $t-1$ to $t-0$, now? Go as far back as you wish, you will never get to $t-1$. (Aristotle would resolve some of these puzzles by distinguishing the potential from the actual infinite, and denying the reality of the latter.)

Western philosophy is sometimes described as an ongoing debate between the scientific-materialist tradition of the Milesians and the religious-
idealist tradition of the Pythagoreans. It could also be described as a fight between Heracliteans (partisans of change, relativity and contingency) and Eleatics (partisans of permanence, universality and necessity).

QUESTION: A **logical foundationalist** is someone who believes that, despite the fact that you cannot prove the PNC is true (because you have to use it to prove it), it is a self-evident and necessary truth, i.e. anyone who rejects it is irrational. Are you a logical foundationalist? Why or why not?

**Xenophanes and Philosophical Theology**

The story of the Eleatic tradition would be incomplete without mentioning Xenophanes (580-530 BC), Parmenides’ teacher. Xenophanes was the first theologian (“theology” = *theos*, “god” + *logos*, “rational study of”).

The following quotes are attributed to Xenophanes:

- If oxen and horses and lions had hands, they would draw gods in the shape of oxen, horses, and lions. The Celts give the gods red hair, the Nubians make them black.
- God is one, greatest among gods and men, not at all like mortals in thought or body. Without effort he shakes all things by the thought of his mind.
- No man has seen nor will anyone know the truth about the gods and the things I speak of, for even if what the man said was true, he would not know, but only shapes a belief about it.

These quotes express three powerful theological ideas.

1. **Anthropomorphism**, the idea that humans typically imagine their gods to be in human form, a projection of themselves. This idea corresponds to the commandment against idolatry, that Israel “make no graven images.” But how far are we to take this thought? What can be said about God that does not relate somehow to human persons?

2. The **philosophical concept of God** as one, non-corporeal, radically other: God is “not at all like mortals in body or thought”, and “shakes all things by the thought of his mind”. This God is closer to the Biblical conception, the “I am,” than the Greek gods. But Xenophanes’ God is not personal. Does his idea lack an essential element of ‘God’?

3. **Agnosticism**, i.e. the skeptical insight that the philosophical idea of God, even if true, is a matter of faith, not knowledge. (Later religious traditions would forget this insight, again and again.)