

1. The Presocratics

Empedocles and Anaxagoras: Nature and Divinity

Empedocles (492-432 BC) was legendary: he healed the city of Selinus of a plague by diverting two rivers to cleanse its waters; he leapt into the crater of Mt. Etna, and descended into the world of the dead; he possessed magical powers, including the ability to restore the dead to life. His writings testify to a complex, if strange vision, which combines both scientific and religious elements in what seems to most readers an unstable mix.

Empedocles tells of a world in which there are two governing principles, Love (unification) and Strife (division). These principles explain both (a) the ongoing processes of the creation and destruction of compound and living things in the world and (b) the original processes of cosmic formation and cosmic destruction. *“I will tell you the beginning, from which all that we gaze upon came to be clear, earth and the sea with many waves and the moist air and the Titan aither, squeezing all things round in a circle. I will tell a double story. For at one time they grow to be only one out of many, but at another time they grow apart to be many out of one at one time all coming together into one by Love, and at another being borne apart by the hatred of Strife.”*

In the original stage of the formation of the world, Love, working on the original elements of earth, air, water and fire (i) formed compounds and simple organic bodies (e.g. eyes, wings, etc.) and then (ii) combined these into living creatures. Humans living in the era of Love are “spiritual beings” (*daimones*), who neither shed blood nor crave meat nor engage in sex.

But then in the second stage, the principle of Strife took over. In this, the fallen present era, (iii) compounds (including trees) emerge directly from the earth, and (iv) human beings are divided into sexual types (male and female), who fall into blood-letting, meat-eating and sexual intercourse. At the end of this era all life will cease, and the elements will have separated into four distinct regions of earth, water, air and the fiery heavens.

This story is strange, and seems more the work of a poet than a scientist. But interestingly, Aristotle reports that Empedocles claimed the living creatures in the second stage of the universe evolve through a kind of “struggle of the fittest,” and that he gave a naturalistic explanation of this evolution: *“On his view, it was of necessity that, for example, the front teeth grew sharp and well adapted at biting, and the back ones broad and useful for chewing food; this result was coincidental, not what they were for. On this view, whenever such parts came about coincidentally as though they were for that purpose, the animals survived, since their form, though coming about by chance, made them fit for survival. Other animals, differently constituted, perished, as Empedocles says of the man-headed calves.”* (*Physics* II.7)

This is a remarkable anticipation of a basic principle of evolution, natural selection, even if Empedocles' idyllic notion of the origin of life prior to the evolution of living things seems bizarre. (The theory of evolution would be refined by later ancient philosophers, though none understood how species evolved out of one another in one tree of life, as would Darwin.)

In addition to the Milesian, naturalistic-scientific story Empocles' poem includes a Pythagorean, religious-ethical story about the fall of man* from an original blessed state, and how humans can return to their pure, immortal way of being through purification (*katharsis*): *"There is an oracle of Necessity, an ancient decree of the gods, that whenever anyone pollutes his own dear limbs with the sin of murder—commits crime and swears a false oath—he wanders away from the blessed ones for thrice ten thousand years, growing to be through time all different kinds of mortals, taking the difficult paths of life one after another. One of them I am now, a fugitive from the gods and a wanderer. But what is lawful for all extends far through the wide-ruling aither and through the immense glare."* (*Another interpretation has Empedocles envisaging two types of human beings, one divine, the other earth-born and doomed to strife and destruction.)

Empedocles' philosophical "dualism" reflects both Milesian-scientific and Pythagorean-religious elements:

SCIENTIFIC REALITY	vs.	RELIGIOUS REALITY
Becoming		Spiritual life
(evolving <i>physis</i> , material reality)	+	(<i>psyche</i> , spiritual reality)
/		\
Being = elements		immortal souls

The human-divine being somehow enters the natural-physical world, acts in it, and leaves it (at least in the final stage of transmigration), and while in it operates by different laws than those of natural things. (Empedocles' picture of reality points to a problem exposed by by the Atomists, the supposed existence of human freedom in an causally deterministic natural universe.)

Anaxagoras, God and the Universe

Anaxagoras, (500-428 BC) who came to Athens in the 460's, took a very different approach to understanding nature. He was, in effect, the first Greek "creationist," i.e. a theologian who claims the universe is the product of a Divine Artisan who forms it out of pre-existing matter or who creates it out of nothing (the latter idea, of creation *ex nihilo*, is a theological dogma of the Abrahamic religions, Judaism, Christianity and Islam).

One part of Anaxagoras' doctrine seems consistent with the Milesian philosophy: he conceives of a physical universe with an original state in which all things are intermingled. Out of the infinitely many qualitative bits of physical being and seeds, things began to interact and take definite form, which is the

world today: “*All things were together, unlimited in both amount and smallness. These things being so, it is necessary to suppose that in all things that are being mixed together there are many things of all kinds, and seeds of all things. Rotation caused the separating off, and the dense is separated from the rare, and the hot from the cold, and the bright from the dark, and the dry from the wet. The dense and the wet and the cold and the dark came together here, where the earth is now, but the rare and the hot and the dry went out into the far reaches of the aither.*”

But Anaxagoras also conceived of a very different approach to understanding the world of living nature, hypothesizing that there was not one, but two original *archai*—both Matter and Mind: “*For mind (nous) is the finest of all things and the purest, and has all judgment about everything and the greatest power. Mind rules all things that possess life—both the larger and the smaller. Mind ruled the entire rotation, and started the rotation. Mind knew all things that are mixed together and separated apart. And Mind set in order all things, whatever kind of things were to be—whatever were and all that now are and whatever will be.*” Here is Anaxagoras’ dualist model:

Becoming/Nature =	
(non-living things)	+ (movement of life)
/	\
Being = seeds	Being = Nous

Remember the discussion of causality in the universe as envisioned by the Milesian philosophers? The totality of things (*ta panta*) emerge and flow, one chain of sequences following another, settling into a cosmic structure of patterns and events. *It is unclear if this vast flux of emergent Becoming (physis) exhibits a permanent Logos or Being, much less purpose or design.* On the Milesian and Heraclitean conception, nature may simply be mysterious, blindly falling into whatever laws (regularities) are formed, with a considerable element of randomness and novelty.

Anaxagoras thought otherwise. Inspired by Xenophanes, Anaxagoras theorized that the cosmos as a whole is the product of a divine plan. Mind (*nous*) set the material universe in motion and continues in some way to animate living processes. Anaxagoras implies we need the idea of a Designer-God to explain the natural order of the physical universe and realm of living things. But what does it mean, to say that *Mind is responsible for nature* (the physical order)? How does Anaxagoras use Mind to explain natural phenomena, especially living nature, and why should it have priority over the rest of the universe (movements of the heavenly bodies)? Why does he introduce Mind as an explanatory factor anyway—why isn’t a purely causal-material explanation sufficient?

On these points Anaxagoras was disappointing. Socrates, who was attracted to Anaxagoras' philosophy, would complain about this: *"One day I heard someone reading from a book of Anaxagoras, that it is Mind that directs and is the cause of everything. I was delighted with this, and thought that Mind would arrange each thing in the way that was best. I thought he would tell me, whether the earth was flat or round, and would then explain, why it was better so; if it was in the middle of the cosmos, he would show that it was better to be in the middle. I was prepared to find out the same way about the sun and the moon and the stars. Once he had given this kind of explanation in regard to each thing, I thought he would go on to explain the good in things as a whole. This wonderful hope was dashed as I went on reading and found that the man made no use of Mind, nor gave it any responsibility in the management of things, but mentioned as causes only such things as air and aither and water and other things like that."* (Phaedo 97b-98d.)

Plato and Aristotle devised metaphysical visions that included a goal-oriented mode of explanation. Their theories included not only goal-directedness in nature and biological phenomena, but also in human life. Aristotle centered his entire philosophy in the idea of teleology, the idea that the reason or final explanation (*logos*) of why things occur or develop is in order to attain a goal or perfected end-state (*telos*)—that everything aims at some perfecting or fulfilling goal. Aristotle argued that the scientific and philosophical disciplines of physics, ethics and metaphysics all have a teleological foundation, implying that God is the 'Design' and 'Goal' as well as the First Cause of all of the non-random the movements of the universe.

<p><i>QUESTION:</i> What is the relationship between the body and the person? Between the universe and God? Is 'reality' somehow two-fold in nature? But is this view of reality coherent? Do you think it is possible to be religious, e.g. a Christian or Muslim, <i>and</i> also be a scientist, or must a person be one or the other, and not both?</p>
