

The Early Stoics

Reading 2 – Stoic Natural Philosophy or Physics in Diogenes' *Lives*

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The primary source for the following text is

Book 7 of Diogenes Laertius' *Lives and Opinions of Eminent Philosophers*.

All section numbers are part of Book 7. For example, section 133, or [133], is 7.133.

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The Best of the Early Stoics: The Lives, Writings & Teachings of the Early Stoics.

Stoic Natural Philosophy or Physics in Diogenes' *Lives*

Diogenes Laertius writes:

THE STOICS DIVIDE physics, or their account of nature, into the following topics: bodies, principles, elements, the gods, limits, place, and what is empty or void.

The former is a specific division. There are three topics in the general division. One has to do with the cosmos. Another is about the elements. And the third is an investigation or account of causes.

The Stoics say that the topic having to do with the cosmos is divided into two parts. The mathematicians have a share in one part of its investigations insofar as they seek to answer questions relating to the fixed stars and the planets—for example, whether the sun is or is not as large as it appears to be; and the same about the moon; and the question regarding their revolutions; and other inquiries of the same

kind. But there is another investigation or field of cosmological inquiry that belongs to the natural philosophers alone. [133] This part of the investigation includes such questions as what the substance of the cosmos is. And whether the sun and the stars consist of matter and form. And whether the cosmos had a beginning or no beginning. And whether it is living or not living. And whether it is destructible (perishable) or indestructible (imperishable). And whether it is managed by providence—and the rest.

The part having to do with the investigation or account of causes also has two parts. Medical inquiry has a share in one part of its investigations insofar as it involves investigation of the leading part of the soul and what happens in the soul, as well as originating seeds and the like. But the other part is also claimed by the mathematicians—for example, how we see; what is responsible for the presentation of a reflected image in a mirror; what is the origin of clouds, thunder, rainbows, halos, comets, and the like.

[134] The Stoics hold that there are two principles of the whole cosmos—the active and the passive. The passive principle is substance without quality, that is, matter. The active principle is the reason within the passive principle, which is to say, God. This God is everlasting and the maker of each thing throughout the whole. Zeno of Citium includes this teaching in his *On Substance*; Cleanthes in his work *On Atoms*; Chrysippus in the first book of his *Natural Philosophy*, toward the end; Archedemus in his treatise *On Elements*; and Posidonius in the second book of his *Physical Exposition*.

The Stoics say that there is a difference between principles and elements. The former are without beginning and are indestructible, whereas the elements are destroyed in the great conflagration. Moreover, the principles are corporeal¹ and without form, while the elements have form.

[135] As Apollodorus declares in his *Natural Philosophy*, body is that which is extended in three dimensions—length, width, and height. This is also called “solid body.” Surface is the limit or extremity of a body, or it is that which has length and width alone without height. In the third book of his *Celestial Phenomena*,

Posidonius maintains that surface exists not only in our thought but also in reality. A line is the limit or extremity of a surface, or it is length without width, or it is that which has length alone. A point is the limit or extremity of a line, the smallest possible mark or dot.

God and mind and fate and Zeus are one thing. God is also called by many other names.

[136] In the beginning, God was by himself. He turned all substance into water by means of air—for just as in animal generation the seed is surrounded by fluid, so in cosmic generation the generative principle of the cosmos remains in the fluid and makes the matter of the cosmos serviceable to God for the next stage of generation. And so God first produced the four elements, fire, water, air, and earth. They are discussed by Zeno in his treatise *On the Whole*, by Chrysippus in the first book of his *Natural Philosophy*, and by Archedemus in a work *On Elements*.

An element is that from which particular things first come to be at their birth and into which they are finally resolved. [137] The four elements together constitute substance without quality, that is, matter. Fire is the hot element, and water is the moist; air is the cold, earth the dry—though this last quality is also found in the air.

Fire is the highest element. It is also called aether and is first generated in the sphere of the fixed stars. Next comes the sphere of the planets. Next to that is the air. Next is the water. And the lowest of all is the earth, which is at the center of all things.

The term cosmos has three meanings. One meaning refers to God himself, the being whose distinct quality is derived from the whole of substance. God is indestructible or imperishable and without beginning or generation. He is the maker of the orderly arrangement of the cosmos. At certain periods of time, he absorbs into himself the whole of substance and once again produces it from himself. [138] They say that another meaning of the term cosmos refers to the orderly arrangement of the stars—the arrangement in itself.² The third meaning refers to the combination of both.

Again, the cosmos is defined as the separate quality of the whole of substance. Or, in the words of Posidonius in his elementary treatise on *Celestial*

Phenomena, it is a system made up of heaven and earth and the natures in them. Or, again, it is a system constituted by gods and men and all things produced for their sake. Heaven is the extreme circumference or ring in which everything divine is found.

The cosmos is managed by mind and providence inasmuch as mind pervades every part of it just as the soul pervades every part of us—this according to what Chrysippus says in the fifth book of his treatise *On Providence*, and Posidonius in the third book of his work *On the Gods*. That said, there is a difference of degree. In some parts there is more of mind, in others less—[139] for mind spreads through some parts as a permanent state or condition, as is the case with bones and sinews. But it spreads through other parts as mind itself, as is the case with the leading part of the soul. In this way, then, the whole cosmos is a living and rational animal, having aether as its leading part—this according to Antipater of Tyre in the eighth book of his treatise *On the Cosmos*. Chrysippus, in the first book of his work *On Providence*, and Posidonius in his book *On the Gods*, say that heaven is the leading part of the cosmos, and Cleanthes says that it is the sun. Nevertheless, in the same work, Chrysippus gives a somewhat different account—namely, that the leading part is the purer part of the aether, the same which they say is the first God that is spread in a sensible manner through those things in the air, and through every animal and plant, and also through the earth itself as a permanent state or condition.

[140] They say that the cosmos is one and finite, having a spherical form. This spherical form is the most suitable for motion—this according to what Posidonius says in the fifth book of his *Discourse on Nature* and the followers of Antipater in their works *On the Cosmos*.

Spread around the outside of the cosmos is the infinite emptiness or void, which is incorporeal. The incorporeal void is that which is not occupied by bodies, even though it can be so occupied. There is no emptiness or void within the cosmos. Rather, the cosmos is fully united. This necessarily follows from the sympathy and agreement or joined tension of heavenly things in relation to earthly things. . . .

[141] Again, time is also incorporeal. It is the measure of the interval of the movement of the cosmos. Past time and future time are infinite, whereas present time is finite.

The Stoics hold that the cosmos is destructible or perishable inasmuch as it is generated. This is based on the analogy of those things that are understood by the senses. If a thing has parts that are perishable, then that thing as a whole is perishable. But the parts of the cosmos are perishable since they transform into one another. Therefore, the cosmos is perishable. Moreover, if something is capable of transformation into an inferior state, then it is perishable. The cosmos is capable of such a transformation since it can be dried up and yet again transformed into water.

[142] The cosmos comes into being when its substance is changed from fire into moisture by means of air. And then the denser part of the moisture condenses into earth, and the finer part is turned into air. And this process of rarefaction goes on more and more until it generates fire. Then plants and animals and the other general kinds of things come from the mixture of these elements.

Zeno discusses the generation and the destruction of the cosmos in his treatise *On the Whole*, Chrysippus in the first book of his *Natural Philosophy*, Posidonius in the first book of his work *On the Cosmos*, as does Cleanthes, as well as Antipater in the tenth book of his *On the Cosmos*. But Panaetius declared that the cosmos is indestructible or imperishable.

Chrysippus, in the first book of his treatise *On Providence*, and Apollodorus in his *Natural Philosophy*, and Posidonius as well, say that the cosmos is a living being or animal and rational and ensouled and intelligent. [143] It is a living being in the sense that it is a substance that is alive and endowed with sensation. For a living being is better than a non-living being or non-animal. But nothing is better than the cosmos. Therefore, the cosmos is a living being. Moreover, it is ensouled as is clear from the fact that each of our souls is a fragment of it. But Boethus says that the cosmos is not a living being.

The unity of the cosmos is maintained by Zeno in his treatise *On the Whole*, by Chrysippus and by

Apollodorus in their works *Natural Philosophy*, and by Posidonius in the first book of his *Physical Discourse*.

As Apollodorus says, the all or the totality of things means, in one sense, the cosmos. In another sense it means the system composed of the cosmos and the external void. So then, the cosmos is finite, and the void is infinite.

[144] Of the stars, some are fixed and carried around with the whole heaven or sky. But the wandering stars or planets have their own unique motions.

The sun travels in an oblique path through the zodiac. Similarly, the moon travels in a spiral path. The sun is pure fire—this according to what Posidonius says in the seventh book of his *Celestial Phenomena*. And it is larger than the earth, as the same author says in the sixth book of his *Discourse on Nature*. Moreover, according to this same author and his school, the sun is spherical in shape like the cosmos itself. That it is fire is proved by its producing all the effects of fire. That it is larger than the earth is shown by the fact that all the earth is illuminated by it—as is the sky or the heaven. Also, the fact that the earth casts a conical shadow proves that the sun is greater than it. And it is because of its great size that the sun is seen from every part of the earth.

[145] The moon, however, is of a more earthly composition since it is nearer to the earth.

Moreover, they say that these fiery bodies and other stars are nourished. The sun gains nourishment from the great sea, the sun being an intelligent ignited mass. The moon gains nourishment from drinkable waters, with an admixture of air, as close as it is to the earth—as Posidonius says in the sixth book of his *Natural Philosophy*. The others gain nourishment from the earth.

They hold that the stars and the immovable earth are spherical in shape. And that the moon does not shine by its own light but by the borrowed light of the sun when it shines on the moon.

An eclipse of the sun takes place when the moon passes in front of it on the side that is toward us—as Zeno shows with a diagram in his treatise *On the Whole*. [146] For the moon is seen approaching at conjunctions and occluding it, and then again receding

from it. One can best observe this when they are reflected in a basin of water.

The moon is eclipsed when it falls into the shadow of the earth. For this reason, an eclipse happens only at the full moon—and not always then, even though it is diametrically opposite to the sun every month. This is so because when its motions are obliquely toward the sun, it does not find itself in the same place as the sun, being either a little more to the north or a little more to the south. When, however, the moon's motion in latitude has brought it into the sun's path through the zodiac, and the moon, therefore, is diametrically opposite to the sun, there is an eclipse. Now the moon is in latitude right on the zodiac when it is in the constellations of Cancer, Scorpio, Aries, and Taurus—according to Posidonius and his followers.

[147] Moving on, God is an immortal living being, rational, perfect in happiness,³ accepting nothing evil into himself, taking providential care of the cosmos and of the things in the cosmos. To be sure, though, God's form is not human. But he is the maker of the whole cosmos, and he is, as it were, the father of all things, both in general and in that part of him that pervades everything, that which is called many names according to its various powers.⁴

The Stoics call God *Dia* (Through or By-Means-Of) since all things are through him or by means of him. They call him *Zēna* insofar as he is the cause of *zēn* (living or life), or insofar as he pervades all *zēn* (living or life).⁵ The name *Athena* is given since the leading part of God extends to the aether. And *Hera* since he extends to the air. And *Hephaestus* since he spreads to the skillful fire. And *Poseidon* since he extends to the moist sea. And *Demeter* since he extends to the earth. Similarly, men have given God his other familiar names by focusing on one or another of his unique attributes.

[148] Zeno says that the substance of God is the whole cosmos and the heaven or sky. The same is said by Chrysippus in the first book of *On the Gods*, and by Posidonius in the first book of *On the Gods*. And Antipater, in the seventh book of his work *On the Cosmos*, says that the substance of God is similar to air. But Boethus, in his work *On Nature*, speaks of the sphere of the fixed stars as the substance of God.

The Stoics sometimes use the term “nature” to mean that which holds the world together. Sometimes nature means that which causes terrestrial things to spring up. Nature is a permanent state or condition moving from itself, producing and holding together all things that arise out of it at determined times and in accord with the generative principles, and effecting results homogeneous with their sources. [149] Nature, they hold, aims at both the advantageous and at pleasure, as is clear from the creative activities of human beings.

In his treatise *On Fate*, Chrysippus declares that all things happen by fate. Posidonius says the same in the second book of his *On Fate*, as does Zeno, and Boethius in the first book of his *On Fate*. Fate is defined as an ongoing string of things responsible for existing things. Or fate is the rational principle by which the cosmos produces.

Moreover, they say that all divination and prophecy are real if providence is also real. And they show that it is an art or skill based on the evidence of certain results—as Zeno says, and Chrysippus in the second book of his *On Divination*, as well as Athenodorus, and Posidonius in the second book of his *Discourse on Nature* and in the fifth book of his *On Divination*. But Panaetius denies that divination has any real existence.

[150] They say that the substance of all existing things is primary matter—as Chrysippus says in the first book of his *Natural Philosophy*, as well as Zeno. Matter is that from which anything whatever is produced. It is called both “substance” and “matter” in reference to the whole cosmos and in reference to apportioned things or parts. That in reference to the whole neither increases nor diminishes, while that in reference to the various parts both increases and diminishes. According to the Stoics, substance is a body that is finite—this according to what Antipater says in the second book of his *On Substance*, and Apollodorus in his *Natural Philosophy*. Matter is passive, which is to say that it can be acted on, as the same author says. For if it were unchangeable, the things that are produced would never have been produced from it. Thus, there is the further teaching that matter is indefinitely divisible. Chrysippus says that the

division itself is infinite but not indefinitely—for there is nothing infinitely small to which the division can extend. But the division goes on incessantly.

[151] According to Chrysippus in the third book of his *Natural Philosophy*, their explanation of the mixture of two things is that they permeate each other through and through in such a way that the particles of one thing do not merely enclose those of another, nor are they merely juxtaposed. Therefore, if a little drop of wine is thrown into the sea, it will be equally diffused over the whole sea for a while before being destroyed altogether and blended with the sea.

The Stoics also hold that there are daemons who sympathize with human beings and watch over human affairs. Heroes are the souls of excellent men who have left behind their bodies.⁶

Of the changes that go on in the air, they describe winter as the cooling of the air above the earth due to the sun’s departure to a greater distance from the earth. [152] Spring is the right temperature of the air that follows from the sun’s approach to us. Summer is the heating of the air above the earth when it travels to the north. And fall is the sun falling away from us.

As for the winds, they are streams of air, variously named according to the locations from which they blow. And the cause of their production is the sun through the evaporation of the clouds.

The rainbow is explained as the reflection of the sun’s rays from watery clouds. Or, as Posidonius says in his *Meteorology*, a rainbow is an image of a segment of the sun or moon in a cloud suffused with dew, which is hollow and visible without intermission. As if in a mirror, the image shows itself in the form of a circular arch.

Comets and bearded stars and meteors are fires that arise when dense air is carried up to the region of aether. [153] A shooting star is the sudden kindling of a mass of fire in rapid motion through the air, which leaves a trail behind it, presenting an appearance of length.

Rain is the transformation of cloud into water, when moisture drawn up by the sun from the earth or the sea has been partially evaporated. If this is cooled down, it is called hoarfrost. Hail is frozen cloud,

crumbled by a wind. Snow is moist matter from a frozen cloud, as Posidonius says in the eighth book of his *Discourse on Nature*.

Lightning is a kindling of clouds from being rubbed together or being torn by wind, as Zeno says in his treatise *On the Whole*. Thunder is the noise these clouds make when they rub against one another or burst. [154] The term thunderbolt is used when the fire is violently kindled and hurled to the ground with great force as the clouds grind against one another or are torn by the wind. Others say that it is a compression of fiery air descending with great force.

A typhoon is a great and violent thunderstorm like a whirlwind, or it is a whirlwind of smoke from a burst cloud. A hurricane is a cloud separated by the force of fire and wind.

They say that earthquakes happen when the wind finds its way into, or it is imprisoned within, the hollow parts of the earth—this according to what Posidonius says in the eighth book of his *Discourse on Nature*. Some earthquakes are a shaking of the earth; some are an opening; some are a lateral shifting; some are vertical shifts.

[155] They believe that the parts of the cosmos are arranged in the following manner. The earth is in the middle, located in the center. Next comes water, which is shaped like a sphere all around, concentric with the earth so that the earth is within the water. After the water comes a spherical layer of air. There are five celestial circles. First, there is the arctic circle, which is always visible. Second is the summer tropic. Third comes the circle of the equinox. Fourth, the winter tropic. Fifth, the antarctic, which is invisible to us. The celestial circles are called parallel because they do not incline toward one another. Nevertheless, they are described around the same center. The zodiac is an oblique circle since it crosses the parallel circles.

[156] And there are five terrestrial zones. First, there is the northern zone, which is beyond the arctic circle. It is uninhabitable because of the cold. The second is a temperate zone. A third, called the hot zone, is uninhabitable because of scorching heat. The fourth is also a temperate zone—but opposite the second. The fifth southern zone is uninhabitable because of cold.

The Stoics hold that nature is a skillful fire, proceeding on the road to production as a fiery and artistic breath.

And the soul is a nature capable of sensation. And they regard it as the breath of life that is congenital with us. For this reason, they say that it is a body and that it remains after death. Nevertheless, it is perishable, even though the soul of the whole cosmos is imperishable—that of which the individual souls of animals are parts. [157] Zeno of Citium and Antipater, in their treatises *On the Soul*, and Posidonius, say that the soul is a warm breath. For by this we are alive and we breathe, and by it we are set in motion. Cleanthes holds that every soul persists until the great conflagration—that is, the great reversion and conversion of all things into fire. But Chrysippus says that only the souls of the wise do so.

Of the soul, the Stoics say there are eight parts: the five senses, the generative seeds or principles in us, our power of speech or the vocal part, and the rational part.

They hold that we see when the light between the visual organ and the object stretches in the form of a cone—this according to what Chrysippus says in the second book of his *Natural Philosophy*, as well as Apollodorus. The apex of the cone in the air is at the eye. The base is at the object seen. Therefore, the thing seen is reported to us by the medium of the air stretching out toward it, as if by a stick.

[158] We hear when the air between the sonant body and the organ of hearing suffers concussion, a vibration that spreads spherically and then forms waves and strikes upon the ears, just as the water in a reservoir forms wavy circles when a stone is thrown into it.

They say that sleep is caused by the slackening of the tension in our senses, which affects the leading part of the soul.

They believe that variations of the vital breath are responsible for the passions.

They say that seed or sperm is that which is capable of generating offspring like the parent. And that the human seed, which is emitted by a human parent in a moist vehicle, is mingled with parts of the soul, blended in the same ratio in which they are present in

READING 2 ▪ STOIC NATURAL PHILOSOPHY OR PHYSICS IN DIOGENES' LIVES

the parent. [159] In the second book of his *Natural Philosophy*, Chrysippus declares it to be in substance identical with vital breath, as is clear from seeds that are cast into the earth, which, if they are kept until they are old, they do not germinate, plainly because their power has evaporated. Sphaerus and his followers also hold that the seed is derived from the whole body. Anyway, every part of the body can be reproduced from it. They

say that the female seed is sterile since it is, as Sphaerus says, without tension, scanty, and watery.

And the leading part is the soul's most dominant part, in which presentations and impulses arise, and from which rational speech comes.⁷ It is in the heart.

[160] Such, then, are the Stoic teachings about nature.

So ends Reading 2. **See you in Reading 3, "Stoic Ethics in Diogenes' Lives."**

NOTES

¹ Other manuscripts read "incorporeal."

² The basic meaning of *kosmos* (cosmos) is "order."

³ The full text reads "perfect or intelligent in happiness" (see Diogenes Laertius, *Lives* 7.147). Some excise "intelligent" or "intellectual" (*noeros*—of or related to the intellect or mind, *nous*) as a later gloss (see Brad Inwood and Lloyd P. Gerson, *The Stoics Reader*, 55). If retained, the "intelligent" happiness would refer to the fact that God's happiness has to do with the intellect or mind; therefore, it is a rational rather than a merely emotional or passion-based happiness.

⁴ "Father of all things" echoes a traditional Greek descriptive for Zeus, that Zeus, or God, is "the father of gods and men"—an epithet that goes back at least to Homer (late eighth century BC).

⁵ *Dia* and *Zēna* are both grammatical forms of the name "Zeus."

⁶ On the nature and role of the demon or daemon (*daimōn*) and the hero (*hērōs*) in Greek history and literature, see Walter Burkert, *Greek Religion*, trans. John Raffan (Cambridge: Harvard University Press, 1985), 179-181, 328, 331-332 (for daemons) and 203-208 (for heroes).

⁷ The "leading part" (*hēgemonikon*) of the soul is 'reason' or 'the reasoning power.' See Aetius 4.21 in Twelve of Part 4.

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