

Vocabulary for the Study of Religion

Volume 1

A–E

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Cosmos / Cosmologies

Cosmology is a modern term derived from the Greek *kosmos*, a concept in which the totality of all existence is represented as an ordered, benign, and perfect unity. In modern English the word has two primary meanings. First, it is the scientific study of outer space, ranging from empirical matters such as the composition of stars to speculative ones such as the simultaneous existence of multiple universes. Second, a cosmology is a worldview, according to which people and societies locate themselves within the cosmos and engage with it. This entry considers the definition of the term, the religious nature of pre-modern cosmologies, and the religious implications of scientific cosmology.

The term cosmology can be traced to the 1730s, although its appearance in a scientific sense dates from only after the Second World War (see Kragh 2007: 1). The logos, which is the root of "logy," means "an account," so that, as a preliminary working definition, cosmology is simply "an account of the cosmos." The primary Latin equivalent of the Greek *Kosmos* is *Universus*, from *Unus verito*, or "changing into one," thereby suggesting unity. The term *cosmos* itself is usually translated from the original Greek as "beautiful order," suggesting not just that there is an order inherent in the management of the cosmos which is independent of the capricious intentions of ancient divine pantheons, but that that order is perfect and therefore, it was thought, benign. In this sense *cosmos* is the root of the word "cosmetics"; ideally, those who use

cosmetics are attempting to make themselves as beautiful as the cosmos.

The earliest extant discussion of the different possible uses of the term “cosmos” was made by the Stoic philosopher Cleomedes:

“Cosmos” is used in many senses, but our present discussion concerns it with reference to its final arrangement, which is defined as follows: a cosmos is a construct formed from the heavens, the Earth, and the natural substances within them. This [cosmos] encompasses all bodies, since, as is demonstrated elsewhere, there is, without qualification, no body existing outside the cosmos.... And that the cosmos has Nature as that which administers it is evident from the following: the ordering of the parts within it; the orderly succession of what comes into existence, the sympathy of the parts in it for one another; the fact that all individual entities are created in relation to something else; and, finally, the fact that everything in the cosmos renders very beneficial services. (1.3.3–1.3.11)

Contained within Cleomedes’ view is the Greek definition of cosmos as consisting of everything, the assumption of order in both space and time, and the belief that the cosmos is benign. Also encompassed is the twofold notion shared by most, if not all, pre-modern cultures (a) that everything in the cosmos has a relationship to everything else and (b) that there are real connections (in Stoic terminology “sympathies”) among all things rather than merely symbolic or metaphorical links. While the belief that the cosmos is benign (cosmophilia, or love of the cosmos) appears to be dominant, its opposite, cosmophobia (fear of a malign cosmos), is found within some religious traditions, such as ancient Gnosticism.

In the modern world there are competing definitions of cosmology. The first and most familiar definition holds that cosmology is the scientific

study of deep space, as in astrophysics. Here cosmology combines empirical components such as the composition of stars with speculative ones such as parallel universes, which are, paradoxically, untestable by the current scientific method. The standard scientific definition retains Cleomedes’ assumption of order in the cosmos and the claim to universality insofar as it aims to explain the entire “origin and contents of the entire contents of the universe” (Roos 2004:1). There is therefore an ontological imperialism in the standard scientific view, which seeks to provide a fuller and deeper explanation than that provided by any other way of seeing the world. All non-scientific cosmologies are deemed either erroneous or proto-scientific.

The second definition reverses this standard scientific view. It maintains that different cosmologies are better understood in terms not of their scientific status but of the cultures that produced them. In this sense cosmology is the study of how persons relate to the cosmos, in which case cosmology should be culturally defined. Every society has a cosmology, or a world view, which helps it organize and rationalize individual and collective behavior. According to Freya Mathews, “Cosmologies are not of course pulled out of the air to suit the convenience of the communities to which they are attached. They are conditioned by many and various historical, environmental, technological, psychological and social factors. A flourishing community is likely to evolve a bright, self-affirming cosmology, and a languishing community is likely to see the world in darker shades.... A good cosmology, in other words, is good for its adherents” (1991: 109).

By this second definition a cosmology is, rather than a cultural epiphenomenon, the driver of a culture. Communities may therefore be bound together—and separated from other communities—by their cosmologies. For example, is the cosmos assumed to have been created and, if so, by single creator or by multiple creators? Did the cosmos emerge from either natural conditions or a divine consciousness? Is it subject primarily to

natural forces or to divine powers? How far can these forces or powers be negotiated, modified, or manipulated by humans?

On a practical level, most pre-modern cultures structured their religious sanctuaries, and sometimes their urban communities, according to their conceptions of the cosmos. Hence we may speak of “cosmopolises” or “cosmograms.” A “cosmic state” (see Champion 2012) is one in which the entire state is organized to embody the structure of the cosmos. The aim is to maintain stability by intentionally harmonizing social forms and political structures with divinely created structures in the cosmos. Typically, sacred calendars serve this function, for they are based on the assumption that divine favor can be guaranteed if human time is ritually coordinated with divine time, as evident in the movement of the heavenly bodies.

Cosmologies cannot be reduced to cultural stereotypes. If we ask what is the “Chinese,” “Indian,” or “Western” conception of the cosmos, we are bound to assume that there is only one such authentically Chinese, Indian, or Western view of the cosmos. In the case of China, for example, it cannot be assumed that the cosmos, presented unproblematically to all Chinese people, was, as Teiser (1999: 116) puts it, “a coherent topic of discussion.” There was no consensus on what constituted a single cosmology. In the Chinese case, which is representative, there are competing models at an elite level on the one hand, and no interest in systematization at the popular level on the other. The conversation should be about Chinese cosmologies rather than about the Chinese cosmology.

Pre-modern Cosmologies

Yet it is possible to identify certain broad, universal characteristics in pre-modern, traditional cosmologies—ones to be found in the literary and oral legacy of cultures from East and South Asia, through sub-Saharan Africa and Europe, to the Americas (see Champion 2012). First, the cosmos is structured in a series of vertical stages, typically

three: the underworld, the world of humans and the surface of the earth, and the higher world of the stars and superior divinities. Sometimes there are more stages. Politically, these vertical structures place humanity in a subservient, often feudal role in relation to divinity, which is usually located in the upper regions. Divinity created the entire cosmos, or at least that part of it that includes human beings, who are themselves then conceived of as slaves, servants, or the children of divinity. Divinities are imagined as similar to human beings in that they possess personalities but are different in that they are invisible and manifest themselves experientially through natural phenomena, including inner events such as dreams. They therefore represent a superior intelligence and power within the cosmos. In those cultures in which divinity possesses ethical virtue, the cosmos takes on moral qualities, with the upper zone, which is sometimes heaven, a region of inherent goodness and the lower zone a region of evil.

Second, the entire cosmos is imagined as alive, contrary to the modern dualistic theory in which self-replicating, “living” biological forms, plants and animals, are distinguished from non-replicating, “dead,” or “inert” material forms such as rocks. The doctrine of universal life is best known by the Greek word *hylozoism* (from the Greek *hulē*, or “matter,” and *zōē*, or “life”). Theologically, *hylozoism* is linked to the overlapping concepts of pantheism, in which the divine is synonymous with the creation, and panentheism, in which divinity at once pervades the creation and transcends it. The panentheistic notion of “Cosmic Consciousness” as a “higher” form of consciousness, and as formulated by Richard Bucke in 1901, provides a source within New Age ideology of the Platonic notion of a rational soul which provides a direct link between the individual and the divine source of the cosmos (see Bucke 1991: 1).

Hylozoism leads naturally to the notion of a participatory cosmos, one in which human beings as living actors have agency, meaning that they can act as agents, perhaps as initiators, of change. They

can interact with other such actors and agents, including “superior” ones such as deities, and “inferior” ones such as stones, plants, air, fire, and water. Hylozoism survives in the modern West in pagan, New Age, and magical traditions. For example, within New Age circles it has been argued that the atom contains consciousness. Modern pagans have adapted James Lovelock’s “Gaia Hypothesis,” which envisages the Earth as a self-regulating organism, to the postulation of Earth, the classical mother goddess, Gaia, as alive (see Lovelock 1987). From an academic perspective David Abram has called for the development of a cosmology which recognizes humans as an integral part of a universe that can be experienced as alive, with mind considered a quality of the wider biosphere (2010). In Abram’s view, “The Gaia hypothesis represents ... the first glimpse from within the domain of pure and precise science, that this planet might best be described as a coherent, living entity” (1985).

Cosmogonies

“Cosmogonies,” or theories of the origin of the cosmos, take different forms, not necessarily mutually exclusive ones. At one extreme are the anti-cosmogonies, in which the cosmos is eternal, having neither a beginning nor an end. The key examples are Aristotelianism (see Aristotle 1921) and modern, scientific, steady-state theory. At the other extreme are theories of a clear, single beginning to the cosmos and an equally clear once-and-for-all end, as in Judaism, Christianity, and Islam. The single-origin theory is matched in scientific cosmology by the Big Bang theory which, in spite of data supporting it, has been seen as an attempt to match science to the Christian theory of creation *ex nihilo*. Indeed, Catholic doctrine was declared compatible with Big Bang theory in 1951. Protestant groups tend to be divided. Liberals see Christianity and Big Bang cosmology as complementary. Creationists see them as incompatible.

Big Bang theorists have offered three primary possibilities: (1) an Open Universe, in which, after a once-only creation, the universe expands forever; (2) a Closed Universe, in which the universe

will gradually run out of energy and eventually collapse in on itself in a “Big Crunch”—this the closest to the standard Christian view; and (3) an Oscillating Universe, in which every Big Crunch is followed by a further Big Bang and so on in an infinite sequence, an idea found in classical Greece and India. Current theory holds that the universe is “flat” (that it will, effectively, exist forever) just on the “open” side of “closed.” These models may be classified as either a “closed world,” consisting of a unique and finite cosmos, or an “infinite Universe,” in which the cosmos is one of many and is transient in nature, as in modern scientific multiverse theory. In this sense, the cosmos need no longer contain everything. The atheistic tendencies of scientific cosmologies are countered from within science by physicists such as John Polkinghorne, who rejects both Cartesian dualism and mechanistic notions of causality in favor of what he calls “the cloud” (1991). For Polkinghorne, religion and science are complementary investigations of a cosmos that is fundamentally intelligible.

Mircea Eliade’s typology assumes a distinction between two kinds of cosmogonies (1959: 29–32). “Cosmic” cosmogonies assume a single creation and a world regulated by an underlying mathematical order. In “chaotic” systems the physical world emerges through a series of random events, often as a result of interaction between natural forces which are personified as gods and goddesses, as in the cosmogonies of Egypt, Mesopotamia, China, India, the Americas, Polynesia, and Australia. Classical antecedents include Epicurianism, derived from the theories of Epicurus (ca. 341–270 BCE) and summarised by Lucretius (1932), in which the universe arose randomly. The term “Chaosmos,” which may be applied to chaotic systems, was coined by James Joyce in *Finnegan’s Wake* as a description of a participatory universe in which humanity interacts with an impersonal order, creating a rich and in detail unpredictable complexity.

Modern “chaos theory” proposes that local conditions produce variations in general laws which can lead to unpredictability, while maintaining the principle that the universe is still subject to

scientific laws (see Gleik 1988: 5). Chaos theorists tend to be enthusiastic about the supposedly pluralistic, democratic implications of rejecting previous, supposedly authoritarian notions of a clockwork universe governed by simple laws of physics. Therefore a “cosmology” of single truths may be complemented by a “chaosmology” of multiple truths.

Cosmogonies are further distinguished by the difference between creationism and emanationism. Creationism requires an external creator, separate from the creation, as in the standard mainstream Judaism, Christianity, and Islam. In emanationism, by contrast, the cosmos comes out of the creator in a smooth progression, with no distinct dividing line between the two, so that the entire cosmos partakes of divinity, as in pantheism and panentheism. The theological differences and political consequences are profound. In emanationist cosmogonies humanity emanates out of the divine, which may or may not be synonymous with primeval natural forces. Humanity therefore both contains divinity and may contact, engage with, and benefit from divinity directly rather than through external mediators. Emanationist cosmogonies may therefore be characterized as inherently democratic or pluralist, whereas creationist cosmogonies may tend to be authoritarian or monist.

Scientific Cosmology and Religion

Nancy Murphy and George Ellis argue that the scientific definition of cosmology is too narrow and that a wider definition sees cosmology as a unified world view, incorporating religious and ethical components as well as scientific ones (1996: 1). These ideas are encouraged by recent challenges from within science to the idea of the cosmos as constant and scientifically knowable. For example, the idea that the laws of physics are not fixed but evolve is complemented by a parallel argument that they are descriptions of observations rather than accounts of real laws. Other theories—that a plurality of universes may exist, each with different laws of physics, that matter and energy are

interchangeable, and that 96 percent of the cosmos consists of dark matter and dark energy, which are so far untraceable—carry metaphysical implications.

One of the most provocative of scientific ideas is the Anthropic Cosmological Principle (see Barrow and Tipler 1986). The hypothesis is that the existence of life in the universe, particularly human life, can set constraints on the way the universe is now and on how it got to be this way. One variant of the Anthropic Principle holds that the conditions within which life flourishes are so particular that either humanity is the natural end product of the evolution of the universe or else the universe was created precisely to create humanity. The reasoning of this variant parallels the belief that the universe results from “intelligent design,” or the view that God must exist because the universe is so complicated—the so-called cosmological argument. The “intelligent design” argument was articulated influentially in 1802 by William Paley (2006), who sought to reconcile theology with eighteenth-century developments in natural philosophy. Charles Darwin (1859) was influenced by Paley’s work in his youth but set out to explain the apparent order and purpose observed by Paley without the need for God.

Scientific cosmology has proposed models similar to those found in traditional religious cosmologies, but the intervention of cosmologists into religious matters has met with mixed success. Martin Rees has argued that while “Scientists’ incursions into theology or philosophy can be embarrassingly naïve or dogmatic, ... the implications of cosmology for these realms of thought may be profound” (2002: 6). Wider scientific discussions of cosmology, for example, include such questions as the nature of consciousness. The inference is that cosmology must have an attitude to universal questions of existence, which then takes it into the realms occupied by religion.

It is generally agreed that cosmos, as a once “meaning-full” concept, populated by supernatural entities, has been progressively replaced by universe as a “meaning-less” arena (see Kragh 2007). However, certain cosmologists are returning to the

realms of the meaningful and transcendental (see Toulmin 1982). The science popularizer Carl Sagan took this universalizing further, poetically evoking the Platonic concept of the origin of the human soul in the stars (Plato 1931: 41e–42a) when he wrote that “The Cosmos is all that is or ever was or ever will be. Our feeblest contemplations of the Cosmos stir us—there is a tingling in the spine, a catch in the voice, a faint sensation, as if a distant memory, of falling from a height. We know we are approaching the greatest of mysteries” (Sagan 1983: 20).

At its most extreme, the consequence of such rhetoric has been the attempt by the physicists Joel Primack and Nancy Abrams (2006) to found what is in effect a scientific New Age religion, one which parallels attempts by advocates of New Age spirituality to justify their world view according to the uncertainties raised by the new physics. The similarity of rhetoric between scientific and religious perspectives is often striking. For example, the physicist Paul Davies has concluded that “the universe has organised its own self-awareness – is for me powerful evidence that there is ‘something going on’ behind it all. The impression of design is overwhelming. Science may explain all the processes whereby the universe evolves its own destiny, but that still leaves room for there to be a meaning behind existence” (1995: 2003). The dominant scientific view, however, is agnostic. Stephen Hawking wrote that “One wouldn’t have to say that God chose to set the universe going in some arbitrary way that we couldn’t understand. It says nothing about whether or not God exists—just that He is not arbitrary” (1993: 133).

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