

processes of random variation and natural selection, a number of questions need to be asked before a doctrine of creation could seem plausible. One will need to ask whether the system is well-designed, whether it shows signs of rational order or of creative freedom, whether it can be seen as purposive or directional, and whether it could be willed by a being who can be termed good.

Since humans will in all likelihood continue to give different answers to these questions, the “religious transcendent” will not always be interpreted in terms of a creator god. Many in the renouncing traditions will continue to focus on an “impersonal” state of wisdom, compassion, and bliss which has no causal role in the universe, but which can be attained by humans. In the Western Christian tradition, the element of design has been so strongly emphasized that sometimes the universe has been seen as a quasi-machine, with the creator as a cosmic clockmaker. However, some contemporary theologians, like Arthur Peacocke, have preferred to picture God as an artist, expressing the divine being in creation. Process theologians have adopted an even more organic view of the relation between the universe and its creator. In this respect they have drawn nearer to the dominant Indian traditions, which speak of the creation as “one” with the creator—meaning that the universe realizes elements of the divine nature that are in some way essential to its being what it is.

Often a contrast is drawn between Indian cyclic view of time and Semitic linear views. It is true that the Indian tradition speaks of vast repetitive cycles of creation, and the Semitic tradition speaks of this universe as having a definite beginning, end, and purpose. But it needs to be remembered that even the early Christian theologian Augustine acknowledged in Book 11 of *City of God* that God could create many universes, and for Indian thinkers each universe can be said to have the purpose of expressing the creative play of Brahman, of working out the destiny of souls, and of making liberation possible. Both these traditions agree that, however finite or infinite time may be, however repetitive or creatively new, it is wholly dependent on the intentional act of a being of supreme value that is supra-temporal. That is the heart of the idea of creation. It is widely shared between Semitic and Indian religious traditions. And while some revision of the original creation myths of these traditions is required by science, the new

understanding of the cosmos that science brings may well be felt not to challenge a basic belief in creation, but to increase a sense of the wisdom, power, and infinity of the creator.

*See also* CREATIO CONTINUA; CREATIO EX NIHILO; DESIGN; GENESIS; LIFE, ORIGINS OF

### **Bibliography**

- Frazer, James. *The Golden Bough* (1922), Abridged edition. London: Penguin, 1996.
- Harvey, Peter. *An Introduction to Buddhism: Teachings, History and Practices*. Cambridge, UK, and New York: Cambridge University Press, 1990.
- Lott, Eric. *Vedantic Approaches to God*. New York: Harper, 1980.
- Müller, F. Max. *Introduction to the Science of Religion* (1873). Varanasi, India: Bharata Manisha, 1972.
- Paley, William. *Natural Theology* (1802). New York: Harper & Brothers, 1847.
- Peacocke, Arthur. *Creation and the World of Science*. New York: Oxford University Press, 1979.
- Polkinghorne, John. *Science and Creation: The Search for Understanding*. Boston: New Science Library, 1989.
- Richardson, W. Mark, and Wildman, Wesley J., eds. *Religion and Science: History, Method, and Dialogue*. New York: Routledge, 1996.
- Schleiermacher, Friedrich. *The Christian Faith*. (1830-1831), trans. Hugh R. Mackintosh and James S. Stewart (1928). Edinburgh, UK: T&T Clark, 1989.
- Tylor, Edward B. *Primitive Culture* (1929). Gloucester, Mass.: Peter Smith, 1970.
- Ward, Keith. *Religion and Creation*. London: Oxford University Press, 1996.
- Yao, Xinzhong. *An Introduction to Confucianism*. New York: Cambridge University Press, 2000.

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## CREATIONISM

The meaning of the term *creationism* has varied greatly over time. In the history of Christian theology it once designated the idea that God creates a new soul for each person born, in contrast to *traducianism*, which envisions the soul as propagating in a manner similar to the way bodies propagate.

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In contemporary culture, however, the term has taken on a number of substantially different meanings that need to be distinguished. For the purposes of this entry, the term *theological creationism* designates the basic belief, held by members of many religious communities, that the universe is not self-existent but is a creation; that is, the universe has being only because a self-existent creator-God gives it being. The existence of a creation is held to be dependent on the effective will of a creator not only to give it being at a beginning but also to sustain it in being from moment to moment.

But the term *creationism* usually entails more than this basic belief that the universe is a creation. The term now ordinarily designates the conviction that the creator-God of which the Bible speaks has both (1) brought the basic material of “the heavens and the earth” into being from nothing at the beginning of time, and (2) conferred specific forms on that basic material in the course of time through occasional episodes of divine intervention. Because of its strong emphasis on the need for several episodes of form-conferring supernatural action, this perspective will here be called *episodic creationism* to distinguish it from *theological creationism* as defined above. Episodic creationism has historically been called *special creationism* because of its idea that each basic kind of creature was specially created (given a specific form) to function in its environment.

Within the category of episodic creationism, however, there are numerous and vastly differing concepts of the particular manner and timetable of the creator’s form-conferring interventions. Following are the basic tenets of the most common versions of these creationist portraits of God’s creative action.

### **Young-earth episodic creationism**

Young-earth episodic creationism is committed to the belief that the universe was brought into being recently (usually taken to be six thousand to ten thousand years ago) and that God’s form-conferring interventions (or “acts of creation”) were performed during a week of six twenty-four-hour days immediately following the beginning. The primary basis for this perspective is the belief that this portrait of the creation’s formational history is the clear teaching of the Bible and that all faithful believers of biblical faiths must accept it.

**Bible inerrancy.** Understanding the creationists’ beliefs concerning the nature and authority of the Bible is essential for understanding all forms of episodic creationism. The Bible (made up of the Hebrew Scriptures plus the New Testament writings of the early Christian era) is generally taken to be not only a trustworthy guide for faith and practice, but also an inerrant source of information on any topic that it addresses. How does the Bible come to have this remarkable character? The Bible has this quality because, inerrantists believe, the Bible is the inspired Word of God. The Bible is believed to be the product, not of human knowledge or of human experience alone, but of divine revelation of information and divine guidance in the writing of the text. As God’s revelation and as the product of divine inspiration, what the Bible says can be trusted to be true and unblemished by error of any sort.

This concept of the Bible, combined with an interpretive approach that favors “the plain reading of the text,” has led many to insist upon a literal interpretation of biblical narratives unless there is strong reason (derived from the Bible itself) to read it in a more figurative or artistic sense. The application of this belief to the first three chapters of Genesis has led a large proportion of the Christian community (at least in the past century) to treat the creation narratives of Genesis 1–3 as literature that is more like a documentary photograph than an artistic portrait. Consequently, Genesis 1–3 is taken to be a chronicle of God’s acts of creation—a concise account of what happened and when during the first week of time. Young-earth episodic creationists read Genesis 1 as a divine revelation that God not only brought the universe into being at the beginning of time but also performed a series of form-conferring interventions over the next six days. Similarly, Genesis 6–9 is taken to be a chronicle of a catastrophic global flood event that occurred within human history, perhaps four thousand to five thousand years ago.

**Creation science.** Furthermore, if the Bible is the inspired Word of God, it must be true. And if it is true, then it must be open to empirical confirmation. Empirical confirmation of the recentness and episodic character of divine acts of creation is the task of a science-styled enterprise known as *creation science*. Creation science stands in the tradition of *flood geology*, which presumes that the major structural features of the earth’s surface were

formed as a consequence of the great flood of Noah. In both cases, selected empirical evidence is reinterpreted in such a way as to reach the conclusions that: (1) the age of the universe is not fourteen or fifteen billion years—as conventional science has concluded—but more like six thousand years; (2) new forms of life could not have evolved in the manner that most biologists believe, but must have been specially created by supernatural means; and (3) the Noachian flood can account for all of the major geological structures that characterize the surface of the earth.

There are several societies and institutions that actively promote young-earth episodic creationism, flood geology, and creation science. The Creation Research Society (CRS), for example, was founded in 1963. Its members must subscribe to a statement of belief that affirms, in the order listed:

- (1) that the Bible, as the inspired Word of God, is historically and scientifically true;
- (2) that all basic types of life forms were made by direct creative acts of God in six days;
- (3) that the Noachian flood was a worldwide historical event; and
- (4) that salvation through Jesus is necessary because of Adam and Eve's fall into sin.

The CRS has published its technical journal, the *Creation Research Society Quarterly*, since 1964 and now supports a variety of “creation-related research” projects at its Van Andel Creation Research Center in north central Arizona.

Creation science is taught in many conservative Christian schools and colleges. Graduate degrees in creation science can be earned at the Institute for Creation Research (ICR) in Santee, California. The ICR maintains an extensive resource center for books, pamphlets, research monographs, textbooks, and videos prepared for a variety of age and educational levels. Its educational outreach programs include *Back to Genesis* regional seminars, *Good Science* workshops at a variety of grade levels, creation science camps, *Case for Creation* community seminars, and creation/evolution debates in which biochemist Duane Gish defends young-earth creationism against various representatives for evolution. Programs of this sort are presented not only throughout the United States but in countries around the world.

The ICR supports research expeditions to locate the remnants of Noah's Ark on Mount Ararat in Turkey and to study catastrophic phenomena at Mount St. Helens in Washington. It sponsors both research trips and public tours in the Grand Canyon—research trips “looking for evidence to support a young-age creation interpretation of the formation and history of the Canyon,” and Grand Canyon outreach tours that are “devoted to reaching pastors, teachers, professionals, and business leaders with the creation message” and designed to give its participants “an opportunity to see evidences for the Genesis Flood firsthand.”

### Other forms of creationism

Creationism has many variants. Three of the most prominent interpretations are old-earth episodic, progressive, and Intelligent Design creationism.

**Old-earth episodic creationism.** The tenets of old-earth episodic creationism are very similar to those of young-earth creationism with the exception of the timetable. The Bible is taken to be the inspired and scientifically inerrant Word of God. The formational capabilities of the created world are presumed to be inadequate to sustain biotic evolution, so that a succession of episodes of form-conferring supernatural intervention remains an essential feature of the creation's formational history, and the Noachian flood was a historical event within human history. However, the “days” of the Genesis 1 creation narrative could have been extended periods of time so that the scientifically-derived timetable for the universe's formational history may be accepted without fear of contradicting the Scriptures.

**Progressive creationism.** Like old-earth episodic creationism, progressive creationism is open to the contributions of science on such matters as the timetable of the creation's formational history. It also gives recognition to the idea, rooted in the Augustinian tradition, that the creation was provided by God with the formational capabilities needed to actualize the structures and life forms that God intended to appear in the course of time. Progressive creationism envisions God giving being at the beginning to the raw materials of the universe and generously providing them with formational powers. Then, in a progressive manner, the Spirit of God is thought to have stimulated and enabled these causal powers to actualize a vast

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array of preordained physical structures (like dry land and seas) and life forms (like plants, cattle, fish, and birds). The formational history of the creation is envisioned as a progressive and cooperative venture in which both divine and creaturely action contribute to the outcome.

**Intelligent Design creationism.** The Intelligent Design movement is a recent entry into this arena of creationist perspectives on the character and role of divine action in effecting the assembly of new creaturely forms—especially new life forms—in the course of time. Proponents of Intelligent Design argue that there is empirical evidence that the universe’s system of natural capabilities for forming things is inadequate for assembling certain information-rich biological structures. And if the system of natural capabilities is inadequate, as Intelligent Design proponents argue, then these biological structures must have been assembled by the action of some non-natural agent, usually taken to be divine. Exactly how and when this divine action might have occurred is not specified. Little or no appeal is made to the biblical text to support the theological implications of this concept.

See also CREATION; CREATION SCIENCE; DESIGN; DESIGN ARGUMENT; DIVINE ACTION; GOD; INTELLIGENT DESIGN; SCOPES TRIAL; SCRIPTURAL INTERPRETATION

### **Bibliography**

- Behe, Michael J. *Darwin’s Black Box: The Biochemical Challenge to Evolution*. New York: Free Press, 1996.
- Dembski, William A. *Intelligent Design: The Bridge Between Science and Theology*. Downers Grove, Ill.: InterVarsity Press, 1999.
- Gilkey, Langdon. *Maker of Heaven and Earth: A Study of the Christian Doctrine of Creation*. Garden City, N.Y.: Doubleday, 1959.
- Johnson, Phillip E. *Defeating Darwinism by Opening Minds*. Downers Grove, Ill.: InterVarsity Press, 1997.
- Morris, Henry M. *The Modern Creation Trilogy*. Green Forest, Ark.: Master Books, 1996.
- Numbers, Ronald. *The Creationists: The Evolution of Scientific Creationism*. New York: Knopf, 1992.
- Ramm, Bernard. *The Christian View of Science and Scripture*. Grand Rapids, Mich.: Eerdmanns, 1956.
- Ross, Hugh. *Creation and Time: A Biblical and Scientific Perspective on the Creation-date Controversy*. Colorado Springs, Colo.: NavPress, 1994.

Young, Davis A. *Christianity and the Age of the Earth*. Grand Rapids, Mich.: Eerdmanns, 1982.

Young, Davis A. *The Biblical Flood: A Case Study of the Church’s Response to Extrabiblical Evidence*. Grand Rapids, Mich.: Eerdmanns, 1995.

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Creation science is a science-styled activity dedicated to the goal of providing observational, experimental, and theoretical support for the basic tenets of young-earth episodic creationism. These tenets are: (1) that the world was brought into being recently (a few thousand years ago); and (2) that the basic types of physical structures (like the sun, moon, and stars) and the basic kinds of living creatures were formed by episodes of supernatural intervention during the first week after the beginning. On the basis of its interpretation of selected empirical data, creation science argues that the universe cannot be as old as the natural sciences have concluded, and that the full array of life forms could not possibly be the outcome of uninterrupted evolutionary development.

See also CREATIONISM; DESIGN; DESIGN ARGUMENT; INTELLIGENT DESIGN; SCOPES TRIAL

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## CRITICAL REALISM

Critical realism is a philosophical view of knowledge. On the one hand it holds that it is possible to acquire knowledge about the external world as it really is, independently of the human mind or subjectivity. That is why it is called *realism*. On the other hand it rejects the view of *naïve realism* that the external world is as it is perceived. Recognizing that perception is a function of, and thus fundamentally marked by, the human mind, it holds that one can only acquire knowledge of the external world by critical reflection on perception and its world. That is why it is called *critical*.