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Paper, Jordan. *Offering Smoke: The Sacred Pipe and Native American Religion*. Moscow, ID: University of Idaho Press, 1988.

Prown, Jennifer S.H. and Robert Brightman. *"The Orders of the Dreamed": George Nelson on Cree and Northern Ojibwa Religion and Myth*. Winnipeg: University of Manitoba Press, 1988.

See also: American Indians as "First Ecologists"; Haudenosaunee Confederacy; LaDuke, Winona; Mother Earth; Totemism.

## Anthropic Principle

The term "Anthropic Principle" refers to two distinct responses – one logical and one metaphysical – to the finding by Western scientific cosmologists that the early universe provided the very conditions necessary for the existence of humankind (Gr: *anthropoi*). According to the logical response, also known as the Weak Anthropic Principle, these cosmological data simply confirm the obvious, for if the initial conditions had not been consistent with the emergence of human life, we would not have been around to observe them (see Barrow and Tipler). According to the metaphysical response, known as the Strong Anthropic Principle, the cosmological data rather provide an occasion for amazement and awe, since they show just how many highly improbable conditions had to pertain simultaneously to make human life possible; when we contemplate this fine-tuning, we may well conclude that the universe has been destined to give rise to us (see Dyson). Because of its teleological character, the Strong Anthropic Principle figures prominently in modern arguments for divine design (see Davies).

Both versions of the Anthropic Principle are inspired by the same scientific data. Cosmologists have shown that although many possible universes would fit Einstein's equations, very few could support carbon-based life. For such life to emerge, a highly particular set of laws and circumstances must pertain. For example:

If the gravitational constant had been slightly smaller, then stars and planets would not have coalesced; had it been larger, then the universe would have collapsed upon itself.

If the strong nuclear force (which holds nuclei together) had been slightly smaller, then the universe would have contained only the simplest element, hydrogen; had it been larger, then all carbon would have turned into oxygen.

If the weak nuclear force (which causes some nuclei to disintegrate) had been smaller, then no hydrogen could have formed and the universe would have

lacked hydrogen-burning stars like our sun, not to mention life-giving water; had it been larger, then supernovae would not have ejected carbon, iron, and oxygen, all essential to life.

If the electromagnetic constant had been smaller, then stars would have burned out too quickly for life to evolve; had it been larger, then stars would not have been hot enough to warm planets sufficiently for carbon-based life.

Some critics of the Strong Anthropic Principle argue that all these conditions, though highly specific, could be the result of chance if enough universes existed to make ours statistically likely. Other critics suggest that, as science progresses, we will likely learn that the seemingly arbitrary laws and circumstances of our universe are in fact necessary. Both chance and necessity are presented as challenges to the idea of cosmic design, especially by an omnipotent divine agent. In response, proponents of the Anthropic Principle typically argue that these critiques do not rule out divine design as a logical possibility – hence the reasonableness of responding to the hospitality of our universe with a sense of awe.

*Louke van Wensveen*

### Further Reading

Barrow, John D. and Frank J. Tipler. *The Anthropic Cosmological Principle*. Oxford: Oxford University Press, 1986.

Davies, Paul. *God and the New Physics*. New York: Simon & Schuster, 1983.

Dyson, Freeman. *Disturbing the Universe*. New York: Harper & Row, 1979.

## Anthropologists

Anthropologists have studied religion since the beginning of the discipline through a succession of three major different theoretical and methodological approaches: ethnological, ethnographic, and ecological. The ethnological approach was developed mainly in England during the late nineteenth and early twentieth centuries, and principally by Edward B. Tylor (1832–1917) at Oxford University and James G. Frazer (1851–1941) at Cambridge University. Their method involved extensive and detailed cross-cultural comparisons through library research. Their theoretical framework was unilinear evolutionism in which so-called primitive societies were thought to reflect earlier stages in cultural evolution. Tylor considered animism, which he defined as a belief in spiritual beings, to be the foundation of all religion.

Frazer is famous for his monumental *Golden Bough*

(1890–1915), a compendium of 12 volumes based on his extensive readings about myth, religion, and magic. His influence was widespread in the academic and public arenas. The abridged version of the *Golden Bough*, first published in 1922, has never gone out of print. In *Totemism and Exogamy* (1910) Frazer examined totemism as both a religion and a form of kinship classification that identifies individuals and groups as descendants of some common ancestor in mythic times, often a species of animal or plant. He recognized that totemic species were usually prohibited as food, foreshadowing more recent research on the potential consequences of taboos for environmental conservation.

In Paris, France, the ethnological approach was pursued by sociologist Emile Durkheim (1858–1918) at the Sorbonne and later by philosopher Claude Lévi-Strauss (1908–) at the College of France. Durkheim's classic study, *The Elementary Forms of Religious Life* (1915), drew mainly from the ethnographic record on Australian Aborigines. From an evolutionary perspective he thought that the Australian aboriginal society was the most primitive and thus provided an opportunity to explore the ultimate origin, character, and functions of religion. However, Durkheim rejected any definition of religion in terms of the supernatural (cf. Tylor), and opposed animism and naturism as adequate explanations of religion (cf. Frazer). (Naturism views aspects of nature like clouds, thunder, lightning, or rainbows as the expression of spiritual beings or forces.) Instead, Durkheim viewed religion as a reflection of society and its power over individuals. He distinguished between the sacred and profane, and considered the sacred to be a social construction as in the case of totemism. Also, he thought that religion molds social categories for understanding nature in terms of time, space, cause, substance, soul, and so on.

Lévi-Strauss, more than any other ethnologist, is associated with the development of structuralism, a perspective that emphasizes the analysis of structural relations as the key to scientific understanding. Things assume meaning through their place in a system. His cross-cultural analyses seek to reveal the deeper structural unity underlying the surface diversity of cultures, and thereby to discover natural laws of mind and culture. He approaches myth, ritual, and symbol as functioning to mediate and reconcile elemental binary oppositions like nature/culture, animal/human, and natural/supernatural. However, while he often deals with natural phenomena as conceptualized by a culture, he does not do so in any ecological manner.

Accumulating criticisms of cross-cultural comparisons as a basis for armchair theorizing about cultural evolution and universals led an increasing number of anthropologists to turn away from generalizing toward particularizing instead. Thus, Franz Boas (1858–1942) in the U.S. emphasized culture history (historical particularism), and A.R. Radcliffe-Brown (1881–1955) and Bronislaw

Malinowski (1884–1942) in England emphasized the practical functions of culture in satisfying psychobiological and social needs (functionalism). In this second approach, ethnography, anthropologists especially interested in religion concentrated on developing a detailed description of this component of culture as a system, based on extensive personal field research. For example, Elsie Clews Parsons (1875–1941) published her two-volume book *Pueblo Indian Religion* (1939) after a quarter of a century of fieldwork. The Pueblos daily interact intimately with the ecosystems in their habitats in Arizona and New Mexico, and this is reflected in much of their religion, as is the case for most indigenous cultures.

In England, Radcliffe-Brown published one of the first monographs on nature religion based on ethnographic fieldwork, *The Andaman Islanders* (1922). (These islands are located in the east Bay of Bengal as part of the territory of India.) The Andamanese believe in spirits of the dead in the sky, forest, and sea, as well as other spirits in natural phenomena. Andamanese relate these spirits to subsistence, food taboos, ceremonies, and aspects of social structure. Also Edward E. Evans-Pritchard's (1902–1973) fieldwork with the Nuer of the Sudan in northern Africa during the 1930s exemplified the ethnographic approach. In his classic book, *The Nuer* (1940), he revealed that their religion is closely connected with their herding economy and society, such as in the ritual sacrifice of cattle to appease spirits during epidemics. The in-depth interpretation of the multiple meanings of religious symbols, behavior, and objects was advanced further in subsequent ethnographic fieldwork in Africa by Victor Turner (1920–1983) in his *The Forests of Symbols* (1967), which focused on the sacred tree of the Ndembu of Zambia in southeastern Africa. Mary Douglas (1921–) also contributed to the interpretative perspective in the anthropological study of religion in her *Purity and Danger* (1966) and *Natural Symbols* (1969), which included comparative analysis of cultural beliefs about pollution as metaphorical statements about society and nature.

Any relevance of the ethnological and ethnographic approaches for understanding the relationships between religions and nature is an inadvertent result of concentrating on indigenous cultures whose religions are usually nature-oriented. However, by the 1940s, the biological science of ecology was beginning to flourish, and by the 1960s, so was environmentalism. These are among the influences in the emergence of a third approach to the anthropology of religion, one that is explicitly, directly, and systematically ecological. Initially it was developed mainly by Roy Rappaport (1926–1997) and Marvin Harris (1927–2001).

Rappaport's dissertation fieldwork with the Maring of Papua New Guinea formed the basis of his subsequent book *Pigs for the Ancestors: Ritual in the Ecology of a New Guinea People* (1967, 1984). This classic work emphasizes

the collection of empirical and quantitative data as well as the application of systems theory to examine the functional role of ritual in regulating the relationship between the dynamic fluctuations in human population and natural resources. Rappaport's subsequent studies are largely theoretical, his collection of essays *Ecology, Meaning, and Religion* (1979) and his monumental treatise *Ritual and Religion in the Making of Humanity* (1999).

Harris explicitly and systematically formulated the foundations and principles of cultural materialism and critiqued competing theoretical approaches in his *The Rise of Anthropological Theory* (1968) and *Cultural Materialism: The Struggle for a Science of Culture* (1979). The main point of cultural materialism as a scientific research strategy is that much of culture can be explained as practical responses to the problems of everyday survival and maintenance. Harris assigns infrastructure research priority and causal primacy, and emphasizes "etic" and behavior over "emic" and thought. Infrastructure is the product of the interaction of environment, population, technology, and economy – the material foundation of society and culture. Etic refers to a Western scientific approach, and emic to native or folk viewpoints. In a series of ingenious essays Harris attempts to analyze and explain numerous curious cultural puzzles as stemming from the material conditions of existence, including the religious phenomena of Aztec ritual sacrifice, the sacred cow in India, and the Muslim and Jewish prohibition on eating pork. (Also see his *Cows, Pigs, Wars, and Witches: The Riddles of Culture* [1974], *Cannibals and Kings: The Origins of Culture* [1977], and *Good to Eat: Riddles of Food and Culture* [1985]).

The ecological approaches developed by Rappaport and Harris have been variously followed by several other anthropologists in studying the relationships between religion and nature, including Gerardo Reichel-Dolmatoff in *Amazonian Cosmos* (1971) about the Desana of the Colombian Amazon, Barbara G. Meyerhoff in *Peyote Hunt* (1974) on the Huichol of northern Mexico, Richard Nelson in *Make Prayers to the Raven* (1983) with the Kutchin foragers in the Alaskan forest, and Stephen Lansing in *Priests and Programmers* (1991) on Balinese temple priests and crop irrigation. Recent anthologies edited by John Grim (2001) and Darrell Posey (1999) demonstrate how important this ecological approach to religion has become. Nevertheless, only very recently has the study of spiritual ecology, the relationships between religions and nature, started to penetrate textbooks on the anthropology of religion (e.g., Bowie 2000). This may coincide with growing awareness of the importance of religion in helping to resolve ecocrises and the unique role anthropologists may play in providing heuristic cases of sustainable green societies in which religion is pivotal.

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#### Further Reading

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- Pals, Daniel L. *Seven Theories of Religion*. New York: Oxford University Press, 1996.
- Sponsel, Leslie E. "Do Anthropologists Need Religion, and Vice Versa? Adventures and Dangers in Spiritual Ecology." In Carole Crumley, ed. *New Directions in Anthropology and Environment: Intersections*. Walnut Creek: AltaMira Press, 2001, 177–200.
- See also: Animism; Anthropology as a Source of Nature Religion; Ecological Anthropology; Ecology and Religion; Rappaport, Roy A.; Religious Studies and Environmental Concern; Ritualizing and Anthropology; Totemism.

### Anthropology as a Source of Nature Religion

Except for anthropologists and until recently, most scholars of religion tended to concentrate on the so-called great, major, or world religions, namely Buddhism, Christianity, Hinduism, Islam, and Judaism. Certainly these religions are of great historical, cultural, and political importance and their adherents now comprise the majority of humanity, a result of centuries or more of crosscultural contact and especially missionization and colonial expansion that has often decimated preexisting native religions.

Another perspective, however, is provided by cultural evolution, encompassing the prehistoric as well as historic periods. The antiquity of religion appears to extend back to the time of Neanderthals some 70,000 years ago where archeologists find the earliest evidence of intentional burial with funeral offerings such as red ocher and even flowers as evidence by pollen remains. In contrast, so-called great, major, or world religions are relatively recent, developing within just the last few thousand years. In other words, the real great, major, or world religion of humanity from a cultural evolutionary and/or temporal perspective is Animism, which can be considered "nature religion." This is the belief that nature includes spirits, sacred forces, and similar extraordinary phenomena.

Most humans throughout time and space have practiced some variety of this nature religion, or what anthropologists generally refer to as Animism (Guthrie 1993;