A sample entry from the

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Taylor, J. Garth. "The Arctic Whale Cult in Labrador." *Études/Inuit/Studies* 9:2 (1985), 121–32.

Turner, Edith. "American Eskimos Celebrate the Whale: Structural Dichotomies and Spirit Identities among the Inupiat of Alaska." *The Drama Review* 37:1 (1993), 98–114.

See also: Animals; Biocentric Religion – A Call for; Cetacean Spirituality; Dolphins and New Age Religion; Elephants; Hyenas; Nile Perch; Primate Spirituality; Radical Environmentalism (and adjacent, Rodney Coronado and the Animal Liberation Front); Watson, Paul – and the Sea Shepherd Conservation Society; Whales and Japanese Culture.

White, Lynn (1907–1987) – Thesis of

The "Lynn White thesis," articulated in its most well-known form in White's "The Historical Roots of Our Ecologic Crisis," (1967) was one of the most important interpretations of history to come out of medieval studies in the second half of the twentieth century. Linking the ethos of medieval Christianity to the emergence of what White called an "exploitative" attitude toward nature in the Western world during the Middle Ages, White's ideas set off an extended debate about the role of religion in creating and sustaining the West's increasingly successful control of the natural world through technology. The explosiveness of this debate, which still reverberates, was touched off by a confluence of factors: urgency in the late 1960s and 1970s over the newly discovered environmental crisis, White's ability to reach an audience beyond that of professional historians, and the perception that White's ideas constituted an "attack" on Christianity which needed to be answered before additional damage was done to the value of conventional religious beliefs. Alongside and to some extent at odds with this debate, were the responses to White's work by medieval historians and historians of technology. These historians, concerned with specific issues raised by historical evidence and methods, found much to criticize about White's arguments, yet acknowledged White as the founder and shaper of the new field to which they themselves now belonged. White's ideas, and the range of responses to them, constitute an essential chapter in contemporary discussion about the relationship of religion and attitudes toward nature.

Lynn Townsend White, Jr. was the first American historian seriously to examine the role of technological invention in the Middle Ages. Although best known in the larger world for his ideas on the causes of contemporary environmental problems, within the scholarly community he was regarded first and foremost as a pioneer in the field of medieval technology. After receiving his Ph.D. from Harvard in 1938, he taught briefly at Princeton and Stanford until becoming president of Mills College in 1943. In 1958 he left Mills and until his retirement in 1974 was Professor of History at the University of California at Los Angeles, where he published *Medieval Technology and Social Change* (1962), demonstrating the profound effects of technological innovation on medieval society, and *Medieval Technology and Religion: Collected Essays* (1978). He continued to write and engage in intellectual debate until his death in 1987.

White's work was informed by his view that not only were the Middle Ages the decisive period in the genesis of Western technological supremacy but that the uniquely activist character of medieval Christianity provided the "psychic foundations" of modern technological inventiveness. White was hardly the first scholar to associate Christianity with the birth of Western science and technology. Max Weber, Robert Forbes, and Ernst Benz, among others, had earlier suggested general causal links. However, White refined these arguments by pointing not only to broad elements within the Judeo-Christian tradition (the biblical mandate of Genesis 1:28 giving humankind "dominion over the Earth," Christian compassion, the destruction of pagan animism, and the notion of matter as inert material) but also to the specific characteristics of Western monasticism as the fundamental cause of Western technological development. European monks, White argued, believed work to be an essential form of worship and embodied this assertion not only in the *Rules* governing their lives but also in their practice of their faith. Monastic communities spearheaded new technological techniques. Their cathedrals, in marked contrast to Byzantine churches, were typically equipped with mechanical clocks and organs, two of the most complex machines known prior to the early modern period. Additional evidence that medieval Christianity sanctioned technological advance can be found in manuscript illuminations, among them a ninth-century illustration of David's army using a rotary grindstone driven by a mechanical crank to sharpen their swords while the heathen enemy uses an old-fashioned whetstone, and a fifteenth-century illustration of a personification of the virtue of Temperance, standing on a windmill, a bridle and bit in her mouth, spurs on her feet, holding eyeglasses and wearing a clock on her head. This kind of evidence, taken together with the record of medieval technological invention, White argued, demonstrated that deep-seated values embedded within Latin Christianity made the pursuit of technology appear morally virtuous, leading ultimately not only to Western technological dominance but also to the continuing impact on the environment of an aggressive stance toward nature.

White's ideas on the relationship of Christian values, technological dynamism and environmental decline can only properly be understood within the context of his overall approach to the study of history. White believed that religion was perhaps the most important force

shaping human societies and, furthermore, that religious values often operated below the level of conscious expression yet had direct effects on human behavior. As a medievalist, he was inclined to see the Middle Ages as the wellspring of Western culture. He also thought that the study of history was not a merely antiquarian enterprise but held meaningful lessons for the present. Finally, despite his negative assessment in "Roots," elsewhere he frequently asserted that technology was a fundamentally humane and liberating force, and he implicitly suggests an image of an inherently dynamic, progressive and Christian West in which "values" rather than politics or economics determine history. These underlying views informed his work, giving it a power and resonance beyond narrower historical interpretations.

The impact of White's thesis on the community of environmentalists, philosophers of technology, and religion scholars concerned with environmental issues was immediate and long lasting. In the twenty years following the publication of "The Historical Roots of Our Ecologic Crisis," over two hundred books and articles used White's ideas as a focal point. His ideas penetrated the popular press, appearing in *Time Magazine*, *Horizon*, *The New York Times*, *The Boy Scout Handbook* and *The Sierra Club Bulletin*. The great bulk of these responses were to one particular aspect of White's argument, his claim in "Roots" that Christianity inculcated a specifically "exploitative" attitude toward nature and consequently that Christianity bore "a great burden of guilt" for the current environmental crisis. Biblical scholars and eco-theologians, among them James Barr, Carl Braaten, John Cobb, and Joseph Sittler, argued instead that the Judeo-Christian tradition could more accurately be described as mandating a care-taking or stewardship relationship to the natural world; Christianity therefore was not part of the problem, but part of the solution to environmental issues. Guidance should be sought from those many elements within the Judeo-Christian tradition that mandated that humans should be the guardians of nature, not its despoilers. Paradoxically, although many eco-theologians argued vociferously against White, they could use his thesis to reinforce the view that environmentalism was at bottom a religious and ethical movement. Like White, they believed that religious values were the most effective antidote to environmental degradation and, like White, who had suggested that St. Francis be made the patron saint of ecologists, they believed that Christianity was a sufficient repository of environmentally sensitive attitudes.

Among historians and philosophers of technology, however, White's thesis stimulated a rather different debate. These scholars called for a closer look at the history of Western attitudes toward nature, labor and the environment and questioned whether White's characterization of medieval values might be overdrawn. In company with the eco-theologians – scholars such as Susan Power Bratton, Paul Santmire, Roger D. Sorrel, and Clarence Glacken – White found an appreciation for nature on its own terms and a sense that human use of nature and animals should be governed by spiritual and moral obligations found to be normative within medieval theology. A detailed study by Jeremy Cohen of the medieval exegesis of Genesis 1:28 showed that medieval commentators typically dealt with questions of God's covenant and human sexuality, bypassing the issue of technological dominion of nature altogether. George Ovitt, Jr. argued, against White, that by the thirteenth century most monastic orders no longer directly performed work with their hands and, far from elevating manual labor in and of itself, consistently subordinated it to spiritual ends. A number of scholars provided evidence that non-Western and pre-Christian cultures also had records of environmental damage. Other scholars, including Carl Mitcham, John Passmore, Robin Attfield and others, found a sympathetic attitude toward human control of the natural environment in Classical, chiefly Stoic, writers, similarly cutting into White's argument that Christianity had a uniquely aggressive approach to nature. Finally, some writers questioned whether White had done more than show an association between Christianity and technology in an age in which a religious perspective permeated every dimension of human life. Had White shown that religion was a cause of technological development, or simply that technological development taking place for economic and political reasons was framed in Christian terms by medieval and later people?

This broad range of responses demonstrated that the links between religion, technology and environmental decline were hardly as direct or straightforward as White had made them appear. Nevertheless, White's powerful and original reading of history, which has shaped a generation of scholarship, remains the touchstone for current and future discussion.

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Further Reading

Hargrove, Eugene C., ed. *Religion and Environmental Crisis*. Athens, GA and London: University of Georgia Press, 1986.

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Ovitt, George, Jr. *The Restoration of Perfection: Labor and Technology in Medieval Culture*. New Brunswick, NJ: Rutgers University Press, 1987.

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See also: Ecology and Religion; Radical Environmentalism; Religious Environmentalist Paradigm; Religious Studies and Environmental Concern; Sittler, Joseph A., Jr.

Whitehead, Alfred North (1861–1947)

Alfred North Whithead's life and work can be divided into three relatively distinct phases: an early period of mathematics and logic (1885–1913), a middle period of epistemology and philosophy of science, (1914–1924) and a later period of constructive metaphysics (1924ff.).

In 1885 Whitehead became a fellow of Trinity College in Cambridge where he remained until 1910. His *Treatise on Universal Algebra* in 1898 won him election to the Royal Society in 1903, but the mathematical period was epitomized by *Principia Mathematica* I–III (1910–1913), co-authored with Bertrand Russell, Whitehead's earlier student. *Principia Mathematica* argued that mathematical symbols are derived from intuitive schemes of logical reasoning. This rooting of abstract mathematical concepts in basic human activities anticipated a tenet in his later constructive metaphysics, as did his distinction between pure and applied mathematics, laid out in *An Introduction to Mathematics* (1911), which can be seen as a forerunner of the later distinction between eternal objects (EOs), or mere possibilities, and the actual occasions (AOs), which embody specific configurations of order.

In his middle period Whitehead worked mostly in London, where he taught mathematics at University College (1910–1914), and held a professorship in Applied Mathematics at the Imperial College of Science and Technology (1914–1924). Already in *The Concept of Nature* (1920) Whitehead aimed to overcome the "bifurcation of nature," which is the result of a mind–body dualism but also follows from the epistemic dichotomy between "real" nature and "mere" phenomena. Whitehead's way here departed from Russell's. Since the apprehension of the world is part of the way the world is, "knowledge is ultimate" (Whitehead 1920: 22). Whitehead here laid the ground for his later doctrine of panpsychism (the view that mental properties apply to all things, including atoms).

In 1924 Whitehead moved to Harvard University where he remained Professor of Philosophy until his retirement in 1937. In *Science and the Modern World* (1925) he set out to account philosophically for the new physics of relativity and quantum theory. With relativity he argued that there is no simple location of things as assumed by Newtonian physics; space-time-matter makes up a unified field of internally related energies-and-events. With quantum theory he argued for a temporal atomicity, according to which the constituents of matter are not solid substances but ephemeral events (cf. Planck's Constant). This view was later developed in his main work, *Process and Reality* (1929). In contrast to a mechanical view of nature, however, Whitehead endorsed a panexperientialist position. Actual occasions "prehend" their immediate past environment and possess a freedom in the process of their becoming; immediately after their actualization they perish and become the stuff for future processes of emergence, or "concrescence."

Since *Religion in the Making* (1926), Whitehead assumed three ultimate principles, 1) creativity, or the chaotic energy presupposed by all actual occasions, 2) eternal objects as the source of information or possibility, and 3) actual occasions which combine creativity with some specific combination of eternal objects. Neither creativity nor eternal objects "exist" on their own, but only as ingredients in actual occasions. God is the chief example of these metaphysical principles. Just as anything else, God is an actual entity with both physical and mental aspects. God's "consequent nature" is derived from the past occasions of the world, while God's "primordial nature" is derived from the divine envisagement of eternal possibilities.

As said in *Process and Reality*, God is both a creature of the world, and the world's creator (Whitehead 1978: 348). Accordingly, God is not the creative source of all that is (as in the Abrahamic traditions), but the formative source of order and novelty in the universe (as in Plato). God is therefore not omnipotent, but has the consistent will of stimulating the growth of complexity in the universe by offering divine "lures" to each actual occasion. God is only one agent among others, but is a formative cause in all worldly events. Moreover, God is one actuality among others, but God is unique by being an everlasting actual entity who never perishes. As everlasting, God encompasses all past reality, which achieves "objective immortality" by being preserved and evaluated in the "consequent nature" of God.

Whitehead considered his own thought as an "inversion of Kant's philosophy." The world cannot be construed on the basis of a perceiving subject; rather, mind and subjectivity are "superjects" which are co-determined by their environment and immediate past. Whitehead termed his own philosophy "organicism," but his metaphysical scheme seems to be influenced by mathematics and physics more than by evolutionary thought. It has been up to later process thinkers such as Charles Hartshorne, John B. Cobb, David Ray Griffin and Charles Birch to develop the evolutionary and ecological aspects of process thought. In the science–religion discussion, Whitehead's philosophy has been carried forward by Ian Barbour.

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