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## Einstein, Albert (1879–1955)

Albert Einstein is the pioneer of twentieth-century physics. In 1905 he published his Special Theory of Relativity, which was followed by the General Theory of Relativity in 1916. In short, this theory states that time, mass and length all change according to velocity. Space and time are a unified continuum, which curves in the presence of mass. Einstein also was involved in the elaboration of quantum mechanics and had lively discussions with his colleagues, Heisenberg, Bohr, and Pauli, regarding its implications. Contrasting Niels Bohr and (even more) Wolfgang Pauli, Einstein insisted on what he once called “the grandeur of reason incarnate” (i.e., his conviction that there is no room for chance or irrational elements in the universe). Whereas this is exactly what quantum mechanics seems to imply, Einstein held that “God does not play dice.” Instead of accepting non-determinacy and a-causal relations in physics, he was sure that at one time there will be found a comprehensive and unified theory that will reveal the seemingly irrational to be part of a higher order.

Despite his attachment to rationalism it is important to note that throughout his life Einstein regarded himself as a “religious” scientist. While he rejected the idea of a personal god who might interfere with human affairs or with nature – this would have been a severe inconsistency with the notion of causality and lack of freedom – he definitely had a kind of pantheistic religious attitude. In a telegram of 1929, he expressed belief in “Spinoza’s God who reveals himself in the orderly harmony of what exists” (Einstein in Jastrow 1978: 28). And in his confessional *The World As I See It* (1934), Einstein dwelled on the idea of pantheism, talking about the mystery of the eternity of life, the inkling of the marvelous structure of reality, and his endeavor “to comprehend a portion, be it ever so tiny, of the reason that manifests itself in nature” (Einstein 1999: 5). In an almost mystical fashion he described his belief in a superior intelligence or transcendent spirit that reveals itself to every scientist who experiences a “rapturous amazement” at the harmony of natural law.

The “mystical” dimensions of physics and its pantheistic connotations have been an issue that Einstein discussed with major proponents of quantum mechanics. With regard to the more esoteric or “New Age” discourse, it is worth mentioning that Einstein debated the topic with David Bohm in the early 1950s. Later, Ken Wilber drew on his theories and pointed out that most of the quantum physicists came to embrace mysticism although simultaneously they rejected any parallelism between physics and mysticism. This is true for Einstein in particular, who remained a classical realist, finding something religious not in nature itself but in the *laws* of nature.

*Kocku von Stuckrad*

## Further Reading

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- See also: Bohm, David; Complexity Theory; Pantheism; Pauli, Wolfgang; Science; Spinoza, Baruch; Wilber, Ken.

## Eiseley, Loren (1907–1977)

Loren Corey Eiseley was born in Anoka, Nebraska, on 3 September 1907, the son of Clyde and Daisy Corey Eiseley. In his early years he sought refuge from the loneliness of a turbulent home life by living among the books of the Lincoln City Library and observing the wonders of his native landscape. At the age of 14 he wrote an essay entitled “Nature Writing” in which he made the rather remarkable assertion that “Killing for the excitement of killing is murder.” He became interested in geology and paleontology, and was drawn by imagination and personality into creative writing. However, because of the poverty of his childhood he understood the need for practical employment and decided to become a scientist. He graduated from the University of Nebraska in 1933 with a major in anthropology.

After a period of drifting, Loren went east for graduate studies at the University of Pennsylvania, finishing his doctorate in 1937. In 1944 he became Professor of Anthropology and head of the Department of Sociology and Anthropology at Oberlin College, having served his scholarly apprenticeship at the University of Kansas. He spent three years at Oberlin before returning to Philadelphia to become chair of the department from which he had received his doctorate. Eiseley died on 9 July 1977 of pancreatic cancer.

For Loren Eiseley “nature” was not some exosomatic machine that awaited the tactical dexterity of the trained technician. The person who intends to learn what the surrounding world has to teach her must adopt the contemplative comportment of the poets, those “word-flight specialists” who are wary of self-evidence in thought and activity. “They probe into life as far as, if not farther than, the molecular biologist does, because they touch life itself and not its particulate structure” (Eiseley 1970: 125). The poets think across the ages, backward and forward, even sideways, according to Eiseley. They perceive more than the bumps of a recent scientific discovery – “this

venerable, word-loving trait . . . is what enables [us] to transmit [our] eternal hunger – [our] yearning for the country of the unchanging autumn light” (Eiseley 1970: 125).

Eiseley’s thought is unique, but very difficult to accompany in “an age which advances progressively backwards” (Eliot 1952: 108), its eyes fixed upon the endless cycle of invention. Eiseley’s is no “nature religion,” if by that we mean the self-sufficient marvel at beautiful sunsets, awesome canyons, or the fascination with our latest attempt to escape what Eiseley calls “the cosmic prison.” The only escape is by the poet’s perception, which is somehow an awareness that what we perceive, what we know, is more than our perception, our knowledge. It is here that Eiseley’s thought gives way to revelation. “The fate of man,” he writes,

is to be the ever recurrent, reproachful Eye floating upon night and solitude. The world cannot be said to exist save by the interposition of that inward eye – *an eye various and not under the restraints to be apprehended from what is vulgarly called the natural* (Eiseley 1969: 88 [italics mine]).

Eiseley’s is a “nature religiousness” that makes every measurement and calculation of the surrounding world a transparent observation – perhaps akin to Eastern Orthodox use of the icon.

With Thoreau, Eiseley “dwelt along the edge of that visible nature of which Darwin assumed the practical mastery. Like the owls Thoreau described in *Walden*, he himself represented the stark twilight of a nature ‘behind the ordinary,’ which has passed unrecognized” (Eiseley 1969: 122). Loren Eiseley does not propose or espouse a religion in the sense of adherence to a carefully articulated, defined, and preserved tradition. That is what he meant when he stated in his autobiography *All the Strange Hours*: “Ironically, I who profess no religion find the whole of my life a religious pilgrimage” (Eiseley 1975: 141). His was a religious pilgrimage, first, because he stood with one foot firmly placed in the discipline of the scientific enterprise, while his other foot probed the spinning dust cloud – Job’s whirlwind.

It is not sufficient any longer to listen at the end of a wire to the rustling of galaxies; it is not enough even to examine the great coil of DNA in which is coded the very alphabet of life. These are our extended perceptions. But beyond lies the great darkness of the ultimate Dreamer, who dreamed the light and the galaxies. Before act was, or substance existed, imagination grew in the dark (Eiseley 1978: 120).

Eiseley’s thought is religious in both style and content. In his prose, his historical studies of Darwin and Francis

Bacon, and in his poetry, words are the essential human domain. They are transcendental – they create, evoke, and test. They partake of meaning, examining the ideas engaged in inventing our “machines.” Words are host to “the unexpected universe” and must be felt and heard as well as measured and nurtured. Style is fundamental to the imaginative power to be comprehensive as well as pragmatic.

In their content, words provide life orientation; they express ultimate order and meaning. We are liberated from bondage to the belief that the achievements of our disciplines somehow represent certitude on a cosmic scale. That is why Loren Eiseley was as interested in language as in bone hunting – his way of referring to his archeological responsibilities. It is why his reflections are mediated by consultation with theologians, philosophers, the works of Homer, Dante, Donne, Shakespeare, and Dostoevsky – and, of course, Emerson and Thoreau. It is why he was often forced to use the word God, or fashion substitutes like “the Player,” “the Synthesizer,” “the ultimate Dreamer.” Whether or not we like the terms “religion” or “religious,” Loren Eiseley insists that we become cultural heretics who move beyond certitude to a sense of the holy.

The term “nature” represents the paradox of the human mind. It is creative ambivalence, a heuristic necessity. We must have the biology and geology upon which the mind feeds. But, in feeding we recognize that nature is a fabrication; in reality there is no such “thing.” The truly responsible mind, aware of the oppositional pull – the impulse to reach out, receive, and change – will never assume the absolute claims of its observations. If there are rigidities in Darwin’s “take” on the evolutionary process, it is because he and the Darwinists were unable to observe their observations or to extend themselves into and beyond those observations. Eiseley quotes Pascal: “There is nothing which we cannot make natural; there is nothing natural which we do not destroy” (1978: 159).

According to Eiseley, there is more to the human mind than the pragmatic urge to take things apart or to be *homo faber*. Failure to nurture this sensibility leaves us in a physiological trap, faced with the difficulty of escaping our own ingenious devotion to making everything natural. Loren Eiseley revised his *Francis Bacon and the Modern Dilemma* and retitled it *The Man Who Saw Through Time* because Bacon has been misused by those who took him to be the advocate of making everything natural. “The world is not to be narrowed,” wrote Bacon in *The Parasceve*, “till it will go into the understanding . . . but the understanding is to be expanded and opened till it can take in the image of the world” (Bacon in Eiseley 1973: quoted on facing page to table of contents).

Loren Eiseley was a prolific author of scientific papers, poetry, and personal essays. He was a recipient of the Athenaeum of Philadelphia Award, the Phi Beta Kappa Award in Science, and was a member of the

National Institute of Arts and Letters. His many published works are host to the intellectual struggle to celebrate the ambivalence of “nature” and to expand the understanding, opening it to the image of the world.

Richard E. Wentz

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- See also: Anthropologists; Anthropology as a Source of Nature Religion; Religious Studies and Environmental Concern.

#### Eisler, Riane (1931–)

North American cultural historian Riane Eisler analyzes the connection between contemporary ecological issues and the global suppression of women, which she thinks are both caused by the dominator model of social structures. The model is developed around *androcracy* – which she defines as the view that men and “masculinity” are superior to women, “femininity” and nature. Since ancient times the dominator model was symbolized by the power of the blade. An alternative suggested by Eisler is the partnership model, developed around *gylany*, a term she uses to describe a societal structure in which women and men are equally valued. Traditional “feminine” values, such

as caring and nonviolence, are, however, given priority in Eisler's partnership model and are taught to both biological sexes.

Instead of a domination hierarchy, the partnership model counts on actualization hierarchies wherein ecological and social systems are constructed out of a hierarchy of complex entities, from the most basic functions to the actualization of the highest potential of these systems. Eisler believes that the partnership model flourished in Neolithic goddess-centered cultures of southeastern Europe and Asia minor. She draws upon the archeologist Marija Gimbutas' findings of Neolithic female figurines and symbols of female reproductive organs, which, according to Gimbutas, symbolize the life-giving power of the divine. The chalice is a symbol of these powers. Partnership spirituality is centered on life-giving, nourishing and empathy; mutual love and sexuality are ultimate expressions of life. Eisler also suggests that the partnership model is reflected in the community around Jesus and in Gnostic Christianity.

Maria Jansdotter

#### Further Reading

- Eisler, Riane. *The Chalice and the Blade: Our History, Our Future*. San Francisco: Harper & Row, 1988.
- See also: Ecofeminism (various); Feminist Spirituality Movement; Gimbutas, Marija; Goddesses – History of; Wicca.

#### Elephants

Cave and rock pictographs and petroglyphs of mammoths and elephants dated to 30,000–10,000 years ago show these large animals have long been of interest to humans. Paleontological analysis of cut marks on bones indicates proboscideans have been a source of sustenance for far longer, perhaps going back to *Homo erectus*. The debate over whether Paleolithic representations of animals were made for religious, utilitarian, or aesthetic reasons remains unsettled. Information linking gender and elephants is evident. Some early depictions show men hunting proboscideans. Connections of elephants with masculinity and economic/power themes continued in the following millennia. Elephants were used as living battle tanks by state societies in the Middle East, Europe, Asia, and Africa. Islam dates the birth of the Prophet Muhammad to the “Year of the Elephant,” so marked in the Qur'an because Ethiopian military mounted on elephants invaded Mecca, his birthplace, in 570. Judaism also links elephants to men and military might. 1 Maccabees recounts a 163 B.C.E. Syrian-led invasion, when war elephants turned violent with the “blood of grapes and mulberries,” against Jews. Going under it to strike “the belly of the beast,” Eleazar