

*Encyclopedia of Environmental Ethics
and Philosophy*

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J. Baird Callicott and Robert Frodeman
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and Philosophy**

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- promote undergraduate and graduate education in environmental ethics and environmental philosophy;
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- make particular effort to be global in scope of concern and membership.

The ISEE newsletter has been published quarterly since 1990. It features general announcements, news, and discussions about issues in environmental ethics and policy. In addition, the newsletter lists conferences and calls for papers, and it lists web sites, articles, and books dealing with environmental issues.

The articles and books listed in all volumes of the newsletter were collected into a comprehensive bibliography, which also lists publications in the journal *Environmental Ethics* and five additional environmental ethics journals. With over 12,000 entries, this collection is the largest bibliography of environmental ethics publications in the world. The bibliography, which receives about 15,000 hits a month, can be accessed at the ISEE web site.

ISEE regularly sponsors meetings at the Pacific, Central, and Eastern Division meetings of the American Philosophical Association. In addition, it co-sponsors an annual conference with the International Association for Environmental Philosophy each June. The ISEE also sponsors occasional sessions at meetings of American Association for the Advancement of Science, the Society for Conservation Biology, the American Institute of Biological Science, and the Society of American Foresters, among other professional and scholarly organizations. It has participated abroad at conferences of the Mind Association and Aristotelian Society in the United Kingdom, the Canadian Association of Learned Societies, and the Australasian Association for Philosophy, and it has been represented at the World Congresses of Philosophy in Moscow (1993) and Boston (1998).

ISEE was an official observer non-governmental organization at the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992.

Over the years, several hundred papers representing research in environmental ethics and philosophy have been presented at these conferences, many of which have subsequently been published.

ISEE maintains an active listserv, whereby any member can contact other members on the ISEE-L list immediately by e-mail. The ISEE web site contains a wealth of information for scholars, teachers, students, and others interested in environmental ethics. In addition to the archive of newsletters, the listserv and the bibliography, the web site assists teachers of environmental ethics with

its collection of course syllabi and with lists of leading textbooks and articles in the field. The ISEE web site also lists graduate programs in environmental ethics, related scholarly and public associations and publications, and funding opportunities, and it summarizes theses and dissertations completed in the field.

The ISEE web site is the best source of information about the International Society for Environmental Ethics, and the best avenue of approach for those who might be interested in joining the society. Questions to and comments for the members of the society are best circulated through the listserv.

SEE ALSO *Environmental Education; Environmental Philosophy: V. Contemporary Philosophy; Rolston III, Holmes.*

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International Society for Environmental Ethics Listserv. Available from <http://listserv.tamu.edu/cgi/wa?SUBED1=isee-l&A=1.html>

Ernest Partridge

INTRINSIC AND INSTRUMENTAL VALUE

The distinction between intrinsic and instrumental value has been central to environmental ethics since its inception as a distinct area of study in philosophy, to the point that some authors believe that the search for intrinsic value in nature is the most fundamental quest of environmental ethics. In fact, this dichotomy is so fundamental that it is possible to create a taxonomy of rival schools of environmental ethics by reference to it, including those that consider the distinction and its various permutations to be less important than most others do. Although some environmental philosophers prefer the terms *inherent* to *intrinsic* and *worth* to *value*, the term *intrinsic value* has now become standard in the field.

THE ORIGIN AND SIGNIFICANCE OF THE DICHOTOMY

The opposition between intrinsic and instrumental value is not an invention of environmental ethics; such a distinction has surfaced in various guises throughout the history of philosophy. Traditionally the opposition between instrumental value and intrinsic value has been posed in this form: How can means, or a sequence of means, relate to an end, to something that is not itself the means to

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another end (cf. Plato's *Republic*, Book 2. and Aristotle's *Nicomachean Ethics*, Book 1, for early discussions of the distinction)? If there are instrumental values that are means to ends, then there must be ends that have, by contrast, intrinsic value—ends that are not means to other ends but are ends in themselves. If an infinite regress of means is irrational, then sequence of means must stop at some point—at the end in itself. This is the familiar, classic argument that Richard Routley and Val Routley (1980) employed in some of the earliest papers in the field.

In environmental ethics, however, attributing intrinsic value to the entities of the natural world (or the discovery that these entities have such value) is a first step toward endowing them with moral status. This ethical regeneration of nature arose in the wake of the fierce denunciation of the anthropocentric nature of European and North American culture in a seminal article by Lynn White Jr. in 1967, published in *Science*. White attributed the contemporary environmental crisis to an anthropocentrism that, he argued, lies at the root of Christianity. In his view the triumph of Christianity over paganism was “the greatest psychic revolution in the history of our culture” (White 1967, p. 1204).

Two worlds were in conflict: On the one hand, there was the fundamentally animist world of Greco-Roman antiquity, in which people believed that all natural entities are guided by a tutelary deity or spirit, so that someone intending to intervene in the course of nature would need to gain the favor and win the graces of the presiding spirits; on the other hand, there was the monotheist world of Christianity, in which a de-deified nature could be exploited in indifference to the feelings of the now exorcised natural spirits and demigods. This disenchanting world, reduced to a state of passive inertia, could be subjected to technoscientific manipulation in the service of humanity's interests. In the Christian cosmogony nature lost its intrinsic value and was reduced to pure instrumental value—a mere tool in the hands of human masters. From the perspective of modern neoclassical economics, nature is a pool of interchangeable raw materials for human use and consumption; if humans exhaust one natural resource, such as great whales, other resources can be substituted with no loss of value.

In contrast, a nonanthropocentric environmental ethic—the cornerstone of which is the theory of the intrinsic value of nature—is a radical departure from this representation of a human-nature relationship in which humans are first and everything else a bad last. Environmental philosophers initially seized on Aldo Leopold's *A Sand County Almanac* as a possible point of departure; in Leopold's words, “men are only fellow-voyagers with other creatures in the odyssey of evolution,” an implication he drew from the Darwinian worldview (1949, p.

109). A suitably modified theory of descent and the phylogenetic-tree image might undermine the prevailing anthropocentrism and foster greater receptivity to the possibility that some nonhuman natural entities and/or nature as a whole might have intrinsic value.

If humans are seen as members of a biotic community, coevolved with other members, the boundaries of the ethical community might extend to encompass the entire biotic community. Indeed, some philosophers think that environmental ethics owes its uniqueness to its openness to the possibility that nonhuman beings and the abiotic components of the natural world have moral status. One clear route to conceiving of such entities as objects of moral consideration is either to reveal that they have previously unnoticed intrinsic value or to confer intrinsic value on them as we might confer the right to vote on previously disenfranchised citizens. Encouraging environmental conservation and preservation as means to human prosperity and well-being would make environmental ethics a mere complication of human-to-human ethics. If environmental ethics is a distinct form of ethics, it demands taking the nonhuman environment into direct consideration because of an intrinsic value that, once acknowledged, places it beyond the realm of a mere natural resource for human exploitation. By analogy one might oppose slavery because it is economically backward; the prosperity and well-being of slave owners might be served by emancipation, but that is an argument based on criteria of efficiency or self-interest, not ethics. An ethical antislavery argument would require a recognition of the intrinsic human value of the slaves, not merely their instrumental value—or lack of it—to the slave masters.

THE BASIS FOR MORAL OBLIGATION

An environmental ethic must first determine a defensible criterion for intrinsic value and then apply it in judging which natural beings possess intrinsic value and to what degree. A second task is the anchoring of moral obligations and human responsibility to the environment in a recognition of intrinsic value in nature. Since the late 1970s three major approaches to these tasks have emerged in the work of Paul W. Taylor, Holmes Rolston III, and J. Baird Callicott.

According to Paul W. Taylor, all living individual (wild) organisms—whether they are animal, vegetable, or unicellular organisms—have intrinsic value because they are teleological centers of life (1981). In the effort to realize their shared goals of living, flourishing, and reproducing, they have developed complex adaptive strategies that are the means in the service of their ends. Therefore a multitude of self-valuing, goal-seeking individuals exists in nature, independently of any human valuation of them. According to Taylor, the affirmation of an

“inherent worth” in the nonhuman world is sufficient to generate prescriptive or prohibitive norms that do not center on human beings; among the first is the rule of noninterference, which prohibits the hindrance of the development and the prosperity of these life forms.

Holmes Rolston III (1994) agrees with Taylor’s criterion for intrinsic value but harbors doubts that such a “biocentric ethic” is suitable for developing measures to protect not just individual living organisms but also species and entire ecosystems, which include abiotic elements. As for species, they are the ends that individual organisms strive to attain. An organism’s developmental trajectory ends in a fully developed specimen of its species, and what it reproduces are more specimens of that species. Ecosystems are the theater of the evolutionary play and thus are productive of all the diverse forms of life, each of which has intrinsic value. Rolston describes with an abundance of detail the evolution of life on earth as it was made intelligible by Darwin while drawing attention to the formidable creativity of the evolutionary process so that it commands our respect and admiration. It is for this purpose that Rolston invites his readers to consider more carefully the scope and diversity of the living world and to ponder its wonders of organization, self-regulation, and functional integration. Seen from this angle, asserting that a natural being possesses no value independently of human consciousness appears parochial and narcissistic because many such beings have long had their own genetically embedded agendas that they strive to realize.

But a natural being is itself only part of a whole; it is a member of a species that is adapted, through the evolutionary process, to the ecological niche that it inhabits. And the ecosystem that it inhabits is itself closely connected to a network of ecosystems hierarchically structured in successive levels of integration. That being so, although natural beings individually construct their intrinsic value, this value is transferable, passing successively from individual natural beings to the species, and from there to all the interrelated and hierarchically structured ecosystems in which the species function.

J. Baird Callicott (1986) follows another course. He attempts to construct an environmental ethic that is just as inclusive, but in the framework of a subjectivist theory of value that carefully distinguishes between the site that has a value and the source of all values. An ethic of anthropogenic values that views any valuation as the result of human conscience is not necessarily anthropocentric because it does not reduce all values—except the value of human beings—to the status of instrumental values. This theory joins forces with the Leopold land ethic. Callicott argues that *value* is first and foremost a verb, and a noun only derivatively, and that *instrumental* and *intrinsic* are, therefore, adverbs, not adjectives. Something has value,

in other words, only if it is valued by a conscious being capable of intentionality. There are two basic ways in which intentionally conscious beings value: instrumentally and intrinsically.

All conscious beings value aspects of their worlds instrumentally—as bats, for instance, value caves for the shelter they provide. But, as Rolston effectively points out, all conscious beings value themselves intrinsically. By a kind of metaphorical extension, Rolston argues that even nonconscious organisms like plants value themselves intrinsically, to the extent that they vigorously compete with other plants for sunlight, water, and nutrients. Therefore, Callicott argues, despite his protestations to the contrary, Rolston’s outlook is also a subjectivist theory of intrinsic value. Organisms have intrinsic value because they value themselves. Human beings and perhaps some other robustly conscious animals are capable of ascribing intrinsic value not only to themselves but also to other entities. Although it is logically possible to value anything intrinsically, people normally do so only for good reasons. In addition to providing a cogent analysis of intrinsic value, part of the work of environmental philosophers, according to Callicott, is to provide people with good reasons to value the natural environment intrinsically. Leopold’s *A Sand County Almanac* is perhaps the most effective effort so far to provide such reasons. More recent works, such as E. O. Wilson’s *The Diversity of Life* also do that kind of work well.

CRITIQUES AND CONTROVERSIES

There is reason to wonder, however, whether the foregoing discussion is based on a misunderstanding. There are two possibilities: (1) Environmental ethicists genuinely aim to guide policies by subjecting them to rational standards, in which case their failure to achieve this objective so far should encourage them to consider what it is in their way of expressing and dealing with problems that has prevented them from succeeding and how they can adapt their discursive strategy to the realities of politics; (2) or the theorists of environmental ethics choose to indulge their metaphysical wrangles over the intrinsic value of natural entities in oblivion to the practical implications of their work.

This criticism was first formulated by Bryan G. Norton (2005) and was the starting point of what has become a dominant school of thought in environmental ethics: environmental pragmatism. Norton observes that the debate between anthropocentrists and nonanthropocentrists is futile insofar as the major concept of “human interests” (or human utility), on which the whole discussion turns, is left undefined. In fact, Norton argues, satisfying human interests does not necessarily involve the irreversible

destruction of the object of desire; he makes a distinction between a utility that is satisfied by the immediate consumption of natural goods and a utility that implies the conservation of the useful object, conservation being a prerequisite for the continued satisfaction of human interests. Norton insists that programs for the protection of the environment are perfectly justifiable on the basis of a sufficiently broad and long-range interpretation of anthropocentric instrumental values—broad enough to transcend the traditional division of human values into only two categories: instrumental and intrinsic. That dichotomy, in his view, fails to express the whole range of values that human beings actually attribute to nature. Rather than force all the diverse values into the straitjacket of a binary theory of value, Norton proposes a plurality of human values situated on a continuum ranging from the consumptive and self-oriented to nonconsumptive concerns such as aesthetics and spirituality. He also explores a new type of value, “transformative value”: a nonconsumptive valuing of nature that can transform unself-critical preferences into expressions of higher ideals.

Some scholars dispute Norton’s assumption that the idea of intrinsic value is politically ineffective. To the contrary, intrinsic value has become the war cry of many advocates of the protection of nature, including members of Greenpeace, the Wilderness Society, and Earth First! Judging from the example of the preamble to the International Convention on Biological Diversity, the belief in the existence of intrinsic values in nature is playing an increasingly important role in the development of environmental attitudes and policies worldwide.

SEE ALSO *Animal Ethics; Anthropomorphism; Biocentrism; Callicott, J. Baird; Deep Ecology; Ecological Feminism; Leopold, Aldo; Norton, Bryan; Rolston, III, Holmes; Taylor, Paul; Vegetarianism.*

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Hicham-Stéphane Afeissa

INVASIVE SPECIES

The global distribution of plants and animals has evolved over many millions of years, having been influenced by oceanic and mountain barriers (Elton 1958). Although such geographic isolation led to major speciation, species still dispersed where geographical barriers permitted, either to avoid deteriorating home ranges or to take advantage of potentially new resources (Stenseth and Lidicker 1992). However, since early humans started to migrate, natural barriers to plant and animal dispersal have been broken down and species have been translocated (“introduced”) deliberately or accidentally to new ecosystems. The rate at which these introductions occur has increased significantly over recent decades as a result of increased globalization of travel and trade.

When released from their native predators, competitors, and diseases, some species become well established and abundant and have a significant impact on natural environments, agriculture, and human health and infrastructure. Often these invasive species or invasive alien species (IAS) have to be managed (i.e., killed), but in dealing with a sentient species conflict can arise between those wanting to protect the indigenous species and ecosystems threatened by the IAS and those wanting to protect individuals of the IAS.