An examination of the history of philosophy and the individuals that historically dominate that discipline will reveal no such name as Aldo Leopold. No "Introduction to Philosophy" texts contain his writings. Leopold had no formal training in philosophy and held no degree in the discipline. In fact, the idea of "Leopold the philosopher" was dismissed out of hand by environmental philosopher R. Attfield (1984:294), who wrote, "Leopold the philosopher is something of a disaster, and I dread the thought of the student whose concept of philosophy is modeled principally on these extracts."

However, I contend that Leopold, who never held a degree or position in philosophy, made many contributions to the discipline of philosophy—some of which I will mention here as the focus of this essay.

The recent yet popular philosophical subdiscipline of environmental ethics was, from its inception, heavily influenced by Leopold's work (Callicott 1989, 1999; Rolston 1988, 1994; Nelson 1993). In fact, the most fully formulated and defended environmental ethical theory to date, the Land Ethic, is an extension of Leopold's ethical thought as presented in his now legendary 50-year-old treatise A Sand County Almanac (1949).

Although Leopold's contribution to environmental ethics stands as proof of his contribution to philosophy, I would like to concentrate first on Leopold's more subtle philosophical offerings, turning later to his Land Ethic (as the position advanced by Leopold and Callicott is a specific type of "environmental ethic," I will refer to Leopold's "Land Ethic" by its proper name).

**PHILOSOPHY AND LEOPOLD'S PHILOSOPHY**

Philosophy is currently understood to be "the study of concepts," especially concepts that are general or abstract, controversial or uncertain, and vital. Some of the really big questions of philosophy include such things as: What is the nature of the world around us (epistemological questions)? What is the nature of human existence and the nature of the nonhuman world (metaphysical questions)? And what would a proper relationship between the human and the nonhuman world look like (ethical questions)? Hence, by contributing to the search for answers to these questions, one would undoubtedly be making contributions to philosophy. Although not an academic philosopher, Leopold seemed keenly aware of the significance of the answers to these questions. For example, once, in making reference to the fact that conservation was not making the appropriate headway, Leopold concluded that conservation had not dealt with certain more fundamental questions. He wrote, "the proof that conservation has not yet touched these foundations...lies in the fact that philosophy and religion have not heard of it" (1949:210). Because there was, and perhaps still is, an attempt to make conservation easy, and because philosophical thinking is often difficult but necessary, conservation has been made trivial. Leopold seemed to think that, until there was a more thorough philosophical exploration of the issues surrounding the conservation debate, conservation as a program would not be ultimately successful. Moreover, Leopold seemed convinced, especially at the end of...
his life, that the only way to attain long-lasting environmental health was to travel down a philosophical or ethical path. His later writings, such as *A Sand County Almanac*, are full of examples of this recognition of the importance of practicing philosophy.

Leopold, I suspect, would be glad to know that philosophy now has heard of “man’s relation to the land and to the animals and plants which grow upon it” (Leopold 149:203). There are currently 4 environmental ethics journals, courses in environmental ethics taught at hundreds of universities and colleges throughout the world, various graduate programs specializing in environmental philosophy, 2 dozen anthologies in the area, 2 international societies for environmental ethics and philosophy, and thousands of articles and books on environmental ethics written by philosophers and nonphilosophers alike. Environmental philosophers have been solicited to author chapters in conservation biology textbooks and to serve as experts on important environmental, public-policy boards.

Partly because of Leopold’s realization that issues of conservation were fundamentally philosophical, a new breed of philosophers—environmental philosophers—have answered Leopold’s call and taken up the task of creating such an ethic. During the past 25 years, environmental philosophers have explored fundamental questions concerning the nature of humans, of Nature, and the human–nature relationship. By challenging the traditional boundaries of these pursuits, environmental ethicists are attempting to grapple with these philosophical questions in unprecedented breadth and depth.

THE CONNECTION BETWEEN WORLDVIEW AND ETHICS

Ethics do not exist in a vacuum. That is, we do not behave in certain ways or think others ought to behave in a certain ways “just because.” We prescribe the actions we do for reasons. Many of the reasons that we understand certain actions to be right or wrong, good or bad depend upon what we take to be the status of the world we find ourselves in (or our assumed epistemological and metaphysical understanding of the world, often referred to as our “worldview”). For example, if we think the earth is round, then we would consider a plan to sail west to get to the Far East acceptable. However, with a different conceptualization of the world—one that insisted that the earth was flat for example—such a plan might seem improbable. What we think about what we ought to do (and hence what we often do) here and elsewhere depends largely on what we understand to be the nature of the world. Hence, for Leopold, and for many environmental ethicists, ethics and environmental ethics is integrally involved with questions regarding the nature of the world around us. Long-lasting ethical change can only be affected by means of the modification of one’s worldview, the way one conceptually visualizes the world.

Leopold (1949:203) observed that “there is yet no ethic dealing with man’s relation to land and to the animals and plants which grow upon it.” Further, he realized that such a alteration in our collective conscience must follow a fundamental change in our collective consciousness. As Leopold (1949:209–210) put it, “no important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions.” A suitable environmental ethic, then, is only possible given the metamorphosis of our axiomatic epistemologies and metaphysics.

Much of what we take to be the facts of the working world—our worldview—comes to us through science. And many of the environmental facts that we hold to be true have come to us most recently through the science of ecology. To that end, Leopold was interested in ecology, not just as a science or a body of knowledge, but also in an exploration of the philosophical implications of ecology. He was interested in what ecology told us about human nature, the nature of Nature, and the nature of the human–nature relationship. Essentially, Leopold realized that ecology revealed an understanding of the world very different from the modern mechanistic, and still dominant, scientific worldview. From a modern perspective, nature is understandable in a mechanistic fashion. Since our worldview greatly shapes our ethics, our actions with regard to nature have corresponded to this view of nature as a machine. As a rational species, we desire consistency between our worldview and our actions (consistency being one of the cornerstones of rationality). When we perceive of the world as a machine we apprehend nothing wrong in treating it like one.
Given a mechanistic paradigm or worldview, the introduction of a new species or the extinction of a species from an ecosystem would be equivalent to adding a spoiler to a car or removing the window sticker after its purchase.

Leopold realized that the science of ecology, however, challenged that fundamental assumption of the "world as machine." In linking humans with nature, and focusing on ecosystems and species as integrally related systems whose functioning can be profoundly disrupted by small changes, the science of ecology significantly challenges the mechanistic views of the past.

Leopold recognized that the discoveries of ecology were not just a collection of interesting scientific facts but that they had fundamental philosophical implications. For Leopold, ecological science had the potential to alter worldviews and ethical behavior as well. By attaining an ecological understanding of the world, one begins to see such things as tinkering and engineering approaches to environmental management in a different light. One becomes much more cautious and skeptical about environmental meddling.

Leopold suggested that our assumed knowledge of the world (i.e., our epistemology) greatly affected our vision of the world (i.e., our metaphysics). When one begins to embrace and internalize the concept of integration of humans to the land, assuming that humans possess value (i.e., intrinsic value) beyond their merely practical value, one begins to understand why some environmentalists argue that the land has intrinsic value and why they advocate so intensely on its behalf. Alteration in our basic worldview can even affect such things as our aesthetic tastes. Our aesthetic tastes, like our ethical tastes, can be retailed through our understanding of the world as well.

We need, Leopold thought, an ecological education to properly see such things as value and beauty in the land. It is only through an ecological education that we come to discover the loss of value and beauty that many of our individual and collective actions have inflicted and are inflicting on the land.

Leopold experienced this transformation first hand. In one of the most famous A Sand County Almanac essays, "Thinking Like a Mountain," Leopold admitted that he once thought that predators had little value in a landscape, and that wolves, in particular, were to be shot. However, he came to realize (with increased ecological awareness) that predators were a crucial component of a healthy ecological community and that there was a beauty to be found in their continued presence in a landscape.

THE PHILOSOPHICAL FOUNDATIONS OF THE LAND ETHIC

I have argued that Leopold contributed to philosophy by advancing a reinterpretation of human identity and human relationships with the land. But, in my opinion, Leopold’s greatest contribution to philosophy was his seminal environmental ethic, the Land Ethic. Leopold had astute insights about the relationships between humans and nature. He observed that there is a historical process of ethics: i.e., an origin, a growth, and a development. Leopold thought that this evolution of ethics could be understood through biology.

Charles Darwin (1871) also postulated a biological progression accounting of ethics. How are ethics possible from the point of view of the theory of evolution? From an evolutionary perspective, only the most competitive individuals survive and reproduce; it would seem that ethics would not evolve, that cooperation would get cut off, that altruistic individuals would die off (and altruism would die out), and that only those with the ability to out-compete others would survive. How could "limitations on freedom of action in the struggle for existence," as Leopold (1949:202) defined ethics, have originated and evolved? One could explain ethics, benevolence, and altruism as a mutation, but why a successful mutation? We all know that ethical behavior does exist, so how is it possible; how did it come into being and how in the world did it persist?

Darwin and Leopold take up the following answer. The key to ethics, ethical behavior, and the process of ethics is found in society and sociability, or community. Ethics come into being in order to facilitate social cooperation. Many animals are in some respect social animals. Humans are intensely social animals and, for social animals, there is an advantage to living in a social setting. It is at this point, or because of this point, that ethics come into being. Because we cannot live in a social setting without some sort of limitation on our freedom of action, we need ethics to facilitate our survival. Therefore, we are ethical beings because and to the extent that we are
social creatures (those with more intense societies have larger neo-cortexes according to Ridley [1996] and Humphrey [1993]). Ethics, then, is correlative to society or community; i.e., a change in one brings about a corresponding change in the other.

But how do ethics develop and spread? How did larger societal ethics evolve? How can an ethic of the land evolve? The answer: we extend ethical consideration (feelings of moral sympathy) to those we consider to be in our community (ethics and society are correlative). Ethical inclusion spreads as our sense of community spreads.

Leopold assumed a global stage in the moral development of human societies and anticipated the next step, the Land Ethic. This, then, is the beginning of environmental ethics: the first attempt to extend the notion of community and corresponding moral consideration outside of the traditional human community. But what is the connection between the global village, a human rights ethic, and the Land Ethic? Historically, the key to this connection is an identification of some element representing those outside the social community as new members of the social community. The keys to this larger inclusiveness dangle from the ring of science: the "new sciences" that include humans as part of the living community. Ecology represents nature as a biotic community; it reveals that humans are members of a nonanthropocentric, biotic community. For Leopold, the Land Ethic was the appropriate response to the recognition of biotic communities. The Land Ethic is the ethical response correlative to our perception of nature as a biotic community, the ethic corresponding to our most recent realization that land is likewise organized as a community.

Leopold seemed convinced that our inherited social instincts would be activated when we began to see plants and animals, soils and waters as integral parts of a biotic community. Reflecting the environmental concern of his time, Leopold appears prophetic. Leopold was, then, proposing a cultivated vision of the natural world, an alteration in the prevailing worldview. His Land Ethic might be considered an attempt to change people's rudimentary thoughts about the land. Land practices, he believed, would follow as natural extensions of such a change in the rudimentary mindset, worldview, and consciousness.

Aldo Leopold did make significant contributions to philosophical thinking. He possessed a basic grasp of the philosophic enterprise and an understanding of the importance of integrating philosophy with scientific endeavor. In fact, it is my belief that we are just now beginning to glimpse the long-lasting philosophical contributions of Aldo Leopold.

**LITERATURE CITED**


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