Values in Nature: The Contributions of Frederick Ferré to Environmental Philosophy

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As a graduate student, I realized that environmental philosophy was an elegant way to meld academics with my love of exploring remote places, and the pain of seeing the wilderness of my native Utah being continually sacrificed for economic expansion.

Well aware of the journal *Environmental Ethics*, I called Eugene Hargrove (1989) to ask about the utility of specializing in the field. To my surprise and chagrin, Hargrove warned that the field of environmental philosophy, along with other areas of "applied" philosophy, was marginalized by those who thought "true" philosophy addresses "pure" topics like truth, beauty, and justice. Subsequently, jobs for environmental philosophers may be rather sparse.

Happily, as it turns out, the status of environmental philosophy has significantly improved. Hargrove (2003) no longer uses the cautionary tone he did fifteen years ago. Newly minted doctorates are not disadvantaged on the job market by specializing in environmental philosophy. Those familiar with the field know that environmental philosophers have made lasting contributions by questioning the most cherished normative assumptions of the Western tradition. Prominent theories, e.g., expand the scope of moral con-siderability beyond *Homo sapiens* in various ways. With such advancements in mind, Baird Callicott (1999, 2–4) remarks that environmental philosophy has and will continue to establish itself as a credible and vital area of philosophical inquiry.

I share Callicott's and Hargrove's optimism. And I also believe that Frederick Ferré has secured a place in the history of environmental philosophy. The following is an attempt to detail why this is so.

Getting Environmental Ethics Back to the Basics: The Nature of Nature

Many twentieth century philosophers, interpreting David Hume's (469) observation about the problem of deriving moral prescriptions from nonmoral descriptions, posit a stultifying is-ought or fact-value gap between ethics and science—"Hume's Guillotine," as Max Black pictures it (Hudson 100). The only way to move from the observation that the lawn is brown to the imperative "WATER THE LAWN!" is another normative assumption that a brown lawn is bad. Any prescription presupposes some other prescription. Values are not facts because values are not embedded in the essence of things—that is, values are not objectively real (Russell 230–31).

Ferré disagrees. As detailed below, the enterprise of metaphysics suggests that values are embedded in the very constitution of things. Consequently, ethics is intimately connected with ontology by axiology. And if metaphysics succeeds in conforming to empirical observations about the world, then scientific ecology entails environmental ethics (Keller and Golley 18).

Ferré's metaphysical approach has several important implications for environmental philosophy. Until we have an idea what the essence of nature *is*, we are not prepared to delineate an environmental ethic. Val Plumwood (173) voices this concern when she says that environmental philosophy is problematic because of its traditional restriction to ethics.

Of course, the word "nature" is laden with so many various connotations that we need to be clear in the way we are using the term. As Ferré (2001, 242; see also 1988, 28) points out, there are three different primary meanings of "nature." First, artifacts of human manipulation (art, cities, dioxin) are not considered part of nature per se; "nature" in this sense is everything apart from the artificial ($nature_1$). Second, "nature" connotes *everything* apart from the supernatural, including the human and all the products of human manipulation ($nature_2$)—art, culture, civilization. Since, from an ecological standpoint, humanity is very much part of nature (Ferré 1998, 272), the second meaning is most relevant for environmental philosophy. Lastly, the word can also mean the essence of something ($nature_3$). With these distinctions in mind, when I use the phrase, "the nature of nature," I mean the $nature_3$ of $nature_2$.

Ferré's metaphysical approach does not merely refocus environmental philosophy on some vague, expansive category "nature," but rather, natural

(or ecological) *entities*. Environmental ethics is the challenge of adjudicating and mitigating the conflicts of interest of diverse ecological entities, including, of course, human beings ($nature_2$).

Ferré thus initiates the enterprise of environmental philosophy with metaphysics. Now, in order to discern Ferré's conception of the essence of ecological entities, we must understand what he is rejecting, specifically, the notion of nature as machine. In a stateside conference endorsed by the Nobel Foundation of Stockholm, Ferré (1995) said that the mechanistic view of nature "leaves out too much that is important and true. It leaves out quality. It leaves out adventure. It leaves out sociality. It leaves out mind and purpose and value. But this need not be the case, and should not long continue."

To conceive of nonhuman nature as a machine is the hallmark of the modern Western worldview—the period beginning with the Renaissance and extending to the present (Keller and Brummer). As expounded by numerous scientists, philosophers, and theologians, nature is a grand and exquisite machine operating solely by the deterministic laws of physics, a view shared by Kepler, Galileo, Hobbes, Descartes, Newton, and others. Connected with the metaphysics of mechanism is the idea that nature, as a machine, has no intrinsic value.

With the advent of Modernity, philosophers, physicists, theologians, and others began repudiating the Aristotelian idea that the cause of growth and development of things is embedded in things (hylomorphism) in favor of a new metaphysics of mechanistic materialism (Merchant 194–205). Using the terminology of Aristotle's (1979, 74) four causes (material, efficient, formal, final), the new mechanical view asserted that nature can be exhaustively understood in terms of material and efficient causation.

In science and philosophy, the mechanistic view maintains that only quantifiable (or primary) properties—viz., the parameters of classical physics such as size, shape, speed, mass, distance, and time—belong to the natural order. Qualitative (or secondary) properties—such as the taste, smell, sight, and touch of Descartes' (Cottingham et al. 84) piece of wax, Hobbes' (114) "phantasms," or the blue color and sweet scent of Locke's (491) violet—emanate from human consciousness. There is no formal or final causation intrinsic to nature, no value.

Certainly something rings true with a mechanical view of nature. In terms of life science, medical science has had great success in analyzing and manipulating biotic function. Animals exhibit fixed behavior patterns, and observing the ratcheting motion of a gecko's tail or the robotic strut of a pigeon invariably conjures mechanistic metaphors. Even so, the premise that natural systems exhibit mechanistic properties does not entail the conclusion that such systems can be understood solely in mechanistic terms.

The challenge for the environmental philosopher is to delineate a metaphysics which is internally coherent and which corresponds to the empirical

observations of ecological science. Given the phenomenon of evolution and the stochasticity of natural systems, this metaphysics must include mechanistic elements but not be exhaustively mechanistic.

For Ferré, Alfred North Whitehead's rich and nuanced "philosophy of organism" meets these demands. Entire books and careers have been devoted to Whitehead (see, e.g., Christian, Johnson, Leclerc, and Lowe), and a robust exegesis is far beyond the scope of the present discussion. My goal here is to paint a simplified picture of Whitehead's metaphysics in which Ferré finds inspiration. An effort to understand the main features of Whiteheadian metaphysics on the front end will reward us in grasping Ferré's environmental philosophy on the back end.

Continuities in Nature

Whitehead's metaphysics reflects his academic training in mathematics and interest in physics. For Whitehead, nature is characterized by pervasive flux. While flux does not occur deterministically, as on the mechanistic account, neither is it indeterministic. Nature, Whitehead observes, "is a structure of evolving processes" (1967b, 72; see also 1978, 222). These processes are the propagation of gradually more intricate and *beautiful* patterns. Metaphysics thus involves aesthetics.

Like Bergson (1983) before him, Whitehead sees in nature a "creative advance" through time which results in the generation of beauty. Nature is, to borrow the neologism of Frederick Turner (99), *kalogenic* (from the Greek word *kalós*, meaning beauty, and the stem *genesis*, to generate). The process of the creation of beauty is intrinsic to nature (Ferré 1996b, 340).

To address Whitehead's metaphysics as it relates to Ferré's environmental philosophy, I address (1) fundamental ontological units and (2) groupings of fundamental ontological units.

(1) Fundamental Ontological Units

The real things (*res verae*) which constitute the world are *actual entities* (Whitehead 1978, 18). These discrete individual entities constitute the cosmos.

Hence Whitehead's metaphysics is atomistic, but actual entities are not the atoms of classical materialism (1967b, 131), which is to say, they are not inert and eternal but epochal—they come into being and perish. Actual entities may be thought of in terms of packets of energy which arise from antecedent environmental conditions, exist for a short time, and dissipate back into the environment. For this reason, Whitehead calls the universe "vibratory" (1978, 79. See also Ferré 1996b, 262). In line with

Heisenberg's (1927) discovery, these fundamental metaphysical units may be particles, or waves, or both: as Ferré puts it, "wavicles" (1996b, 262). Whitehead wisely did not attempt to identify, in the language of physics, exactly what actual entities are: this is an empirical question that may or may not be adequately answered.

Actual entities are both physical and mental, but their relative importance varies from entity to entity (1978, 239). Whitehead is not asserting that actual entities are comprised of two distinct parts, but that actual entities involve two *modes of activity*. Whitehead used the terms "physical pole" and "mental pole," although he allegedly regretted using these phrases because many readers interpreted them to be referring to metaphysically distinct components of actual entities rather than activities (Lowe 43, n. 5).

Whether you are talking about materiality or mentality depends on which aspect of an actual entity you are emphasizing. If you are talking about the way in which actual entities are causally constituted by environmental conditions, then you are emphasizing the operations of the physical pole; if you are talking about the way in which entities influence their own constitution by selecting from the antecedent environment what elements to incorporate and which to exclude, then you are emphasizing the operations of the mental pole (Whitehead 1978, 277). Physicality gives nature its mechanistic character; mentality gives nature its stochastic and creative character.

In short, a common feature of actual entities is that they "experience" their antecedent environment, though this does not mean *conscious* experience.

(2) Groupings of Fundamental Ontological Units

The objects of everyday experience such as rocks, plants, animals, and clouds are macrocosmic groupings of microcosmic actual entities. Like cells in a body, actual entities become and perish, but groupings of them are what endure (1967a, 204).

Groupings of actual entities are "societies." Whitehead's taxonomy of societies is complex, but for present purposes we may divide societies into two categories: nonliving and living. A society is "living" if it contains within it a significant number of actual entities whose mental poles react to the environment in a substantially original way (1978, 102). The processes constituting nonliving things are mostly deterministic (177). In this sense they display no novelty.

There is, however, no firm ontological divide between what is living and what is not (177). Viruses are exemplary borderline cases. Life is a

matter of degree, depending on the prominence of novel entities comprising the groupings (177).

A "self" is the most complex form of a living thing and is characterized by a central direction or intentionality provided by a "mind." Anything with a mind is a self: robins, grizzlies, coyotes, humans. Plants exhibit far less intentionality than animals, and therefore probably are not appropriately considered "selves."

Discontinuities in Nature

While there are fundamental ontological similarities throughout nature, there are also fundamental ontological differences. Whitehead uses the same metaphysical system to elaborate these differences as he did the similarities. Distinctions are related to the arrangements of actual entities. As we have already alluded, these discontinuities are not abrupt; they are a matter of degree.

Aside from nonliving societies like rocks and stars, Whitehead identifies three basic types of living societies: plant, animal, and human (1956, 38–39). Differences of structure and function between plants, animals, and humans result in different abilities of reacting to the environment. The capacity for novelty is the defining feature of life, and so living things exhibit some degree of freedom. Freedom is limited, since any creativity is exercised within the bounds set by the antecedent physical world (1978, 133).

Flora have some capacity for novelty by opening or closing their flowers, by tilting their leaves toward the rising sun, or by spreading out their roots around a rock outcropping in order to penetrate the moist soil below. Fauna have a greater capacity for alternative action, yet these actions are all within a limited scope of possibility.

Human beings exhibit the greatest capacity for novelty. We can react to the intricacies of the world in a variety of ways. And because humans are aware of the greatest set of possibilities, we can respond with the greatest freedom and originality. Although there is no absolute freedom, humans exhibit more freedom in their actions within the constraints of what is environmentally given than do other biota.

The capacity for novelty is efficacious for survival. While a tortoise might react to oncoming cars in only one way—withdrawing into its shell and staying put—a Dalmatian might run out of the road when it could have just stood there. A human, recognizing the possibility of oncoming traffic, might avoid such a scenario altogether by looking both ways before stepping onto the macadam.

Axiological Implications

On the mechanical view of nature, as we have seen, value is the artifact or residue of human consciousness—in the language of Galileo and Locke, a "secondary property." Yet for Whitehead, like the Romantic writers of the eighteenth century, nature on the mechanistic model "is a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly" (1967b, 54). Intuitively, given the crepuscular glow of the morning sky, or the discovery of a katydid hiding on a green leaf, something on the mechanistic model seems missing.

Whitehead sees nature in a starkly different way. Like the pre-Moderns and unlike the Moderns, nature for Whitehead consists of more than material and efficient causation. The universe has a teleological integrant, and this integrant is *novelty*. Like Aristotle and unlike Plato, novelty is not an external nor transcendent form, but is embodied in natural process (1978, 222).

As a function of creative advance, the generation of value is immanent in ontological process. To be actual is to be valuable. The source of value is the self-determination—the exercise of creativity—in the coming-into-being of actual entities. An actual entity has significance for itself (1978, 25; see also 1967b, 93)—that is to say, it has *intrinsic* value—because of creative self-determinacy in its constitution. In part, an actual entity is the cause of itself: *causa sui* (1978, 88). Greater satisfaction in self-determination translates into greater significance for oneself, greater intrinsic value.

The creation of intrinsic value results in beauty. Creation of beauty is not creation out of nothing (*creatio ex nihilo*), but is always contingent upon environmental conditions. Although no actual entity is simply a rote copy of some preceding entity, an entity can only be constituted by what is environmentally given. What is creative is the way data are selected and coordinated in the process of self-constitution.

Beauty is subjective as well as objective. An actual entity has instrumental value by virtue of providing beautiful data for newly arising entities. Once an entity perishes, it becomes objective data for other entities (1967b, 104). The later type of beauty corresponds to a second type of value: *instrumental* (or extrinsic) value. An entity has intrinsic value by virtue of its own subjective experience in the creation of beauty. Having intrinsic value is a precondition for having instrumental value, and, in general, the greater the intrinsic value of an entity, the greater its potential extrinsic value.

Although high intrinsic value generally translates into high instrumental value, some entities with little intrinsic value might nevertheless have a lot of instrumental value. Atmospheric gas seem to have little value (beauty) in-and-of itself, but has immense instrumental value to the whole biosphere.

In summary, on the macrocosmic level of everyday experience, life is the manifestation of a creativity which is part of the very essence of natural process. Flora, fungi, and fauna are not ontologically distinct sets of things, but are simply noticeable types of structured societies along a continuum.

And humans have an important place on this continuum. At this juncture of evolutionary history, human beings are a particularly creative, and hence intrinsically valuable, type of organism. The cephalization of the human brain, while in continuity with the rest of nature, enables humans to escape the tyranny, more than any other species, from the causal constraints of the immediate environment. The result is civilization, symphonies, surfing, and sonnets. Whitehead gives reason to believe that humans are special in nature but not above or outside of nature. Whitehead has, in Victor Lowe's words, "made it possible for thinking man once more to enjoy his organic relationship with nature" (24).

From the Nature of Nature to Environmental Ethics

Ferré has done the most work in detailing an extra-mechanistic metaphysics and related axiology and ethic. Ferré calls his philosophical system "personalistic organicism"—*organicism* because nature is a structured process of evolving patterns, as in Whitehead's philosophy of organism, and *personalistic* because selves with capacities for sociality, morality, language, and creativity are the centers of the highest value.

Personalistic organicism leaves open the possibility that some nonhuman selves may be persons, but at this time we cannot be sure (2001, 141). In this sense, Ferré's philosophy is not anthropocentric, but *anthropometric*: "Seen from the perspective of the ecological worldview[,] the universe is abuzz with centers of value, of which the experience of human value centers is distinguished as more complex, probably more vivid, and certainly more richly stocked with normative alternative possibilities" (2001, 63) than nonhuman biota. Thus, in contrast with the egalitarian holism of deep ecology (Naess, Devall and Sessions, Fox), the non-egalitarian holism of land ethics (Callicott 1989), and the egalitarian polycentrism of biocentric egalitarianism (Taylor), personalistic organicism can be properly characterized as *nonegalitarian polycentrism.*

Personalistic organicism assigns all entities both intrinsic and extrinsic value. On the macrocosmic scale of ecosystems, all biotic and abiotic components have differing amounts of intrinsic and instrumental value. Both types of value are ontologically interlocked: if an organism displays preference, then it has value-for-itself, or intrinsic value. The things for which it expresses preference have instrumental value (1994, 69). Ferré's nonegalitarian axiology of graded intrinsic and extrinsic values provides a basis for

adjudicating conflicts between humans and nonhumans, and between individual organisms and larger ecological wholes.

The job of ethics is not to be absolutely and objectively rigorous; the job of ethics is to provide a substantive criterion, derived from metaphysics via axiology, for evaluating moral dilemmas. The criterion of an environmental ethic founded on kalogenic metaphysics is this: an act is right insofar as it transmits as much value as possible to future experiencing subjects. To put it another way, an act is right insofar as it tends to affirm the natural creative process relative to other possible alternative actions.

This criterion is consequentialistic. A kalogenic environmental ethic does not hope to be action-guiding *a priori*. Instead it provides a framework of principles or standards, derived from the criterion, to be used in evaluating alternative actions. Four principles are salient: (1) ontological interconnectedness, (2) biodiversity, (3) nonanthropocentric valuation, and (4) differential valuation.

(1) Ontological interconnectedness

The science of ecology emphasizes the interconnectedness of biota and the environment. Ecology, German zoologist Ernest Haeckel wrote in 1866, is "the investigation of the total relations of the animal both to its inorganic and to its organic environment" (Allee et al. 837). According to ecologist Eugene Odum, organisms "and the nonliving environment function together as an *ecological system or ecosystem"* (27).

Thus an ecological system is the integrated system of an organism-complex and physical-environmental complex (Golley 8). Such ontological interconnectedness is essential to Ferré's environmental philosophy. Self-actualization is dependent upon environmentally available data. But not only are organisms causally connected with the environment, the environment is also causally connected to organisms. This reciprocity results in a mutual inter-dependence of living things (see also Whitehead 1967b, 205, 206). Any organism which degrades the environment invariably harms its own vitality.

Since there is a profound interconnectedness of biota with each other and with the nonbiotic environment, we can say that actions which sever the bonds of the ecological web are substantively wrong, as in the use anthropogenic toxins such as biocides (Carson 297).

(2) Biodiversity

If we equate the general evolutionary advance from biological simplicity to complexity with the universe's "creative advance into novelty," then

preserving and enhancing the beauty of the natural world involves affirming biotic diversity and ecosystemic complexity. To decrease biodiversity is damnable because it diminishes intrinsic value—or, to put it another way, it is wrong to cut off the kinds of satisfactions that organisms can enjoy.

In ecological systems, there is species competition for limited resources, so extinction is an inexorable result of biospheric function. But human activity has dramatically increased the rate of species extinction (see, e.g., Myers). Human activity has diminished biodiversity and ecosystem complexity. From the perspective of a kalogenic environmental ethic, we can condemn these practices as objectively wrong.

(3) Nonanthropocentric valuation

Ferré does not preclude nonhumans from possessing intrinsic value. Ferré argues that the locus of intrinsic value is a be an experiencing subject of some type: "This need not be self-conscious experience; but intrinsically satisfying experiences of a wide range of sharpness and complexity are not hard to imagine[.] We need not be talking in metaphors when we speak of contented cows and happy clams" (1996a, 23). On the macrocosmic level, all living things have some intrinsic value insofar as they are the subjects of experience.

For this reason, defenders of radical anthropocentrism, following thinkers like Descartes, Locke, and Kant who give intrinsic value only to human beings, are seriously misguided. Economist William Baxter argues that nonhuman organisms have value only insofar as they benefit people (Satris 95, 96).

What Baxter fails to realize is that intrinsic value is manifested by showing preference, and showing preference is not exclusively a human behavior. The answer is that polar bears, penguins, and pine trees have intrinsic value by preferring (respectively) salmon to silted rivers, Arctic oceans to tropical oceans, and clean air to car exhaust. Indeed, as Ferré remarks, "Preference need not be conscious, as it is with human beings; preference, positive or negative, may be expressed by engulfing a speck of food, by fleeing from an attacking lion, by buzzing into sweet-smelling blossoms, or even by unfolding leaves and petals toward the sun. Here, at the level of organism, is the behavioral equivalent of value judgments. The organismic world is full of valuers; therefore the world—emphatically including the world outside the human realm—is full of value" (1996a, 22).

(4) Differential valuation

We have seen how Whitehead asserts that there are gradations of intrinsic value, depending on the intensity of subjective experience. In biological terms, this means that different life-forms have different amounts of intrinsic value; this is the basis of a personalistic organicism's nonegalitarianism. Though all living things have intrinsic value, all things do not have *equal* intrinsic value because all living things do not have the same intensity of experience. Cats show a wider variety of preference than worms, and in this sense cats have greater intrinsic value. Similarly, humans show a wider range of preference than cats.

As we have seen, intrinsic value implies extrinsic (instrumental) value: if organisms display preference, then there must be things which are preferred, viz., things which have instrumental value. Assuming that every organism is preferred in some way by some other organism, it is safe to say that all biota have both intrinsic and instrumental value (Ferré 1996a, 23). How are these different types of value to be compared and weighed? On one hand, the instrumental value of a clam for a clam-digger might outweigh the intrinsic value of the clam itself; it is likely that the satisfaction the clam-digger gets in finding, preparing, and eating the clam is greater than the satisfaction of the clam's own languid subjectivity (24).

On the other hand, organisms with relatively little intrinsic value ought not to be used indiscriminately by organisms with more well-developed subjectivity. The instrumental value of something might be enormous to a multitude of low-sentience selves, and subsequently trump the claims of a relatively few higher-sentience selves. The instrumental value of grass in a Great Plains ecosystem to all other biota might outweigh its instrumental value for organisms with greater intrinsic value which would gain a good deal of satisfaction from eating the grass, like cattle—and humans, from eating red meat (1994, 69). This means the value of a resource for spotted owls or desert tortoises might exceed the resource's value for human ends. The ecosphere is characterized by a discordance of conflicting values. Robins must eat worms and wolves must masticate elks. A nonegalitarian axiology of graded intrinsic and extrinsic values provides the framework for weighing and adjudicating the myriad conflicts of interest of ecological entities.

It is obvious, however, that coming up with a fixed scale for measuring different levels of intrinsic and extrinsic value in order to determine which interests trump is not something that can be reasonably hoped for. As Ferré eloquently puts it: "The universe is full of intrinsic values[.] These all deserve ethical respect to the degrees appropriate to the intensity of the values concerned. The world is likewise full of instrumental values with all ranges of importance. Both sorts are difficult to measure and even more difficult to weigh against one another" (1994, 72).

Thus a kalogenic environmental ethic maintains that axiological differences permeate nature, and that comparing and contrasting conflicting values is a formidable undertaking. The final prescription, to borrow Aristotle's (1985, 53) phrase, "depends on perception," since each situation is characterized by unique particular circumstances. Ethics cannot be exhaustively *a priori*, as Kant hoped for, or detached from temporal conditions, as Thomas Nagel (187) thinks.

Looking back, positing humanity as the sole locus of value in nature is perhaps the greatest philosophical blunder of Modernity—an ideological blunder with very material consequences. The American ecologist Aldo Leopold was prescient enough to understand this, and pointed to a path heading off in a totally different direction (224–25). To give Leopold's ethic a new ontological foundation, we might rework this maxim to read: "Human action is right when it tends to preserve kalogenesis! It is wrong when it tends otherwise!" Here, the connection between ecology and ethics implicit in Leopold's formulation is made explicit by an overt rejection of the mechanistic view of nature and its allied fact-value gap.

The metaethical ramifications of rejecting the mechanical view of nature are profound. If one is willing give up the idea that value is extrinsic to nature, as Whitehead and Leopold and Ferré do, then the fact-value gap becomes a chimera. Living beings react to the environment in various ways. In reacting, they show preference. In showing preference, they value and are valuable. Thus, as value is intrinsic to nature, metaphysics includes axiology. And this permits us to draw the conclusion, in the language of environmental philosophy, that ecology entails ethics (Keller and Golley 18).

Environmental Metaethics: The Promise of Personalistic Organicism

Any ethical theory presupposes, explicitly or otherwise, an ontology (Keller 1997b). Metaethical problems arise when a theory's prescriptions are inconsistent with its own metaphysical foundations, or its metaphysical foundations do not provide adequate support for its prescriptions. A central yet underacknowledged task of environmental philosophy involves the metaethical enterprise of evaluating an ethic in light of its ontological assumptions.

Let us briefly turn our attention to a critical comparison of Ferré's environmental philosophy with several other theories prominent in the field. Each comparison is worthy of an entire journal article, and many interesting theories are omitted altogether. As my contribution to this book is already too long, I simply wish to point out in passing how Ferré skirts some metaethical problems which vex (1) Holmes Rolston's anthropocen-

tric biocentrism, (2) Arne Naess' deep ecology, and (3) Baird Callicott's land ethic.

(1) Anthropocentric biocentrism

Although Rolston calls his environmental ethic "anthropocentric biocentrism" (1988, 77). Rolston's axiology is biocentric in the sense that all organisms have intrinsic value. Even so, a fundamental ontological divide sets humans apart from nonhumans. This bifurcation is elicited in the ethic.

In Rolston's estimation, nonhumans cannot exercise freedom in any morally significant way; nonhumans cannot choose between alternative actions which affect identity and destiny. Even the behavior of higher vertebrates like grizzly bears is causally determined. If grizzlies face extinction they cannot "consciously change to increase their chance of survival" (1987, 154). Nor do nonhumans love. Freedom and love "are emergents at the human level[.] Neither is to be looked for in rocks or trees, nor really in animals" (308). Since nonhumans have neither the capacity for choice nor affection, nonhumans are "nonmoral forms of life" (139).

These fundamental ontological differences mean that nonhumans and humans are the subject-matters of two totally different normative systems: *environmental ethics*, which is devoted to the nonhuman natural world, and *social ethics*, which is reserved exclusively for human beings (1988, 57).

This theoretical dualism is metaethically problematic. As Ferré asks, when human interest conflicts with nonhuman interest, by "what higher ethics shall we 'adjudicate' between the two incoherent ethics in conflict?" (1996a, 20). Rolston says only that "humans ought to preserve so far as they can the richness of the biological community" (1988, 230), but as long as reasons can be given why human interests trump nonhuman interests, there is no binding moral duty to nonhumans.

If we assume that there are instances in which nonhuman interests override human interests, then in order to have substantive normative guidance, Rolston needs to provide a *third* normative system to help us evaluate incommensurable social and environmental claims. The lack of a higher-order a system leaves Rolston's environmental ethic in want of serviceable action-guiding principle (Ferré 1996a, 21).

Ferré's ethic does not fall into a dualism of theories; the same ethic applies to all entities—human, nonhuman, nonliving. Depending on the situation, there will be instances in which something with great ecological instrumental value will trump the interests of an entity or entities (like human beings) with much intrinsic value yet low instrumental value. There will be other instances in which an entity or entities with much intrinsic

value will trump the interests of entities with little intrinsic value. All relevant continuities and discontinuities must be considered and weighed.

(2) Deep ecology

In his seminal article, Naess (1973) criticizes environmental thinkers, and the Western tradition in general, for "shallow" human-centeredness. Deep ecology, in contrast, is thoroughly nonanthropocentric.

Two interrelated underpinnings support deep ecology's nonanthropocentrism (Keller 1997b). The first principle, "biocentric equality," asserts that all biota have *equal* intrinsic value (Naess 96; see also Devall and Sessions 67). The second principle, ecological holism, asserts that through a psychological process of "self-realization" one comes to understand that the biosphere does not consist of metaphysically discrete individuals, but ontologically-interconnected individuals comprising one unbroken whole (Devall and Sessions 68).

I have argued elsewhere that biocentric equality and ecological holism, taken separately, are problematic (Keller 1997b). Here I wish to simply point out the inconsistency of the two principles with each other, and how Ferré avoids this inherent tension of deep ecology.

Ecologically, innumerable and irresolvable conflicts exist between the ability of individuals to flourish to old age, and the integrity and stability of ecosystemic wholes. To cite just one example, feral goats (*Capra hircus*) in the Galápagos archipelago have degraded entire island ecosystems. The island of Pinta was free of introduced mammals until 1959, when a fisherman set loose three goats (a male and two females) for the purpose of providing fresh meat on future trips. By 1970 the goat population on Pinta was between five and ten thousand. In that short time the effects on native flora were astonishing: four species of endemic plants were no longer found on the island (*Alternanthera flavicoma, A. nudicaulis, Gossypium baradense,* and *Ipomoea habeliana*); five species (one endemic) were substantially reduced in abundance; six species of trees and shrubs (four endemic) were absent in the heavily populated southernmost reaches (Eckhardt 588).

In 1971 an eradication program began on Pinta, and by 1977 about forty thousand goats had been killed (Hamann 219), the last goat being eliminated in 1986 (Loope et al. 275). The goats had caused severe damage to a thick peat layer on the northern slope, soil erosion, and the permanent disappearance of some plant species (Hamann 232). Overall, though, as a direct result of eliminating goats, the flora of Pinta began showing clear signs of regeneration (234).

The point is that feral goats must be killed in order to ward off the extinction of other species, species which are necessary for the overall integrity and stability of delicate tropical island ecosystems. The flourish-

ing of some species is incompatible with the flourishing of other species, and the flourishing of all species is incompatible with the health of the ecosystem. How is the egalitarian holist going to recognize the intrinsic value and right to flourish of *Capra hircus* and *Ipomoea habeliana*? It is impossible.

Ferré avoids the impasse with his two sliding scales of intrinsic and extrinsic valuation. Regard for ecosystemic wholes requires treating individuals differently, since individuals of different species have unequal ecosystemic utility and disutility. Value differs accordingly. Animals with a high degree of cephalization such as feral goats (and hence a high degree of intrinsic value) nonetheless have a higher degree of instrumental disvalue for the ecosystems they inhabit. In direct repudiation of biocentric equality—not to mention animal rights (Regan) and animal liberation (Singer)—personal-istic organicism mandates that feral goats must be killed in order to mitigate the eradication of other species necessary for the integrity of ecosystemic wholes.

(3) Land ethics

Leopold revolutionized ethics in the middle of the twentieth century by calling into question the long-held dogma of individualism in Western moral philosophy.

Taking Leopold's insight as his point of departure, Callicott argues that the entire enterprise of mainstream Occidental ethics, which has been based on the individual, must be abandoned (1989, 8; see also Keller 2003). Land ethics shifts the loci of moral considerability from individual organisms to ecosystemic wholes (1989, 84). An organism has value only insofar as it contributes to the overall integrity and stability of the larger biotic community in which it lives, and this value differs (28, 37).

Though the biotic community is the locus of value, this does not mean that ecosystems or the organisms that comprise them are intrinsically valuable. Accepting Modernity's value-free vision of nature (1989, 132), Callicott holds that "the *source* of all value is human consciousness" (133). There is no such thing as "intrinsic" value existing independently of valuing humans (161).

In a moving passage, Callicott laments the degradation of the Mississippi River ecosystem he valued as a boy (1989, 114). A land ethic frames the loss in terms of the conscious recognition of the deterioration of the riparian ecosystem taken as a whole. Rejecting axiological realism, Callicott says that we might confer upon an ecosystem a sort of noninstrumental value, in the same way we value family and friends in-and-of themselves, but there is no value without cognizant subjects doing the conferring. Callicott refers to this "truncated" form of noninstrumental

value as "inherent" value (133). The degradation of the Mississippi basin is bad only if someone feels remorse.

This points to a weakness in land ethics which Ferré is able to avoid. Certainly, part of the turpitude of ecological degradation is the adverse mental and physical effects on humans. But this is not the whole story. The turpitude also involves the loss of intrinsically valuable organisms, independently of their membership in biotic communities which are valued by conscious onlookers.

Embracing axiological realism, Ferré gives us the additional, needed vocabulary to speak in these terms. The loss includes the destruction of centers of intrinsic value—the individual fish, frogs, birds, snakes, otters, deer, spiders, cottonwoods, and other living things which are beautiful, and hence valuable, in their own right.

Conclusion: The Reward of Reading Ferré

The foregoing simply aims to point out the reward of reading Ferré when faced with the challenge of doing environmental philosophy. The human place in nature is difficult to locate with precision, as we are at once continuous and discontinuous with the rest of the biosphere. Ferré's contribution to environmental philosophy is to put in perspective our subtly nuanced relationship with all that surrounds us.

From Socrates' assertion that "I'm a lover of learning, and trees and open country won't teach me anything, whereas men in the town do" (Plato 479) through the Roman writer Varro's claim that "divine nature made the country, but man's skills the towns" (quoted in Glacken x), the idea that humans are separate from nature has been central to Western thought. Virtually every great thinker of the Occidental tradition, as geographer Clarence Glacken (713) remarks, has in one way or another addressed this theme. The unique combination of hand and brain results in technology, distinguishing us from other animals. So does our ability to invent social structures. This is the basis of the ancient Greek distinction between *physis* (nature) and *nomos* (law or custom).

Yet there is also a sense in which this discontinuity has been conflated into an absolute ontological divide between humanity and nature. If identity is a function of environmental flux and flow as evolutionary law and ecological science suggest (Keller 1997a), then Descartes' claim that "it is certain that I am really distinct from my body, and can exist without it" (115) is seriously mistaken.

Our ontological status is far more complicated than Descartes concluded. We are the product of common evolutionary process, yet we enjoy a startlingly high degree of sentience. We share the same double helix structure of DNA with all other organisms from bacteria to bears, yet we

continuously step back from nature to contemplate our uniqueness. We build cities to protect ourselves from the capriciousness of planetary forces, yet flee our cities to escape "from being destroyed by the terrible neural tension of modern existence" (Marshall 143). Personalistic organicism sheds light on the ways we are simultaneously similar and dissimilar with our nonhuman counterparts. Ontological differences between humans, nonhuman animals, plants, and nonliving entities are matters of structure and function, not of kind.

Thinking about this complex human/nonhuman dynamic is rewarding in-and-of itself. If, however—in the spirit of Marx (5)—the point of understanding the world is to improve it, then another issue invariably arises: what is the connection (or disconnection) between doing environmental philosophy and forming public policy? An implicit assumption during the discipline's brief thirty-year history has been that theorizing will ultimately affect change. Public policy involves presuppositions, and the contribution of environmental philosophy is to critique dominant paradigms and provide constructive alternative presuppositions (Callicott 1995) for law. Of course, for this to happen, the insights of philosophers need to be transmitted to activists and politicians, and this is best achieved by activists and politicians to master a certain degree of philosophical theory (Hargrove 1984, 292).

Perhaps, in the best of all possible worlds, public policy makers would value philosophy as highly as philosophers think they should. Realistically, though, the likelihood of environmental activists and public policy makers studying philosophy so that they can understand the articles in *Environmental Ethics* seems about as likely as a majority of religious scholars learning Hebrew and Greek just so they can read the Old and New Testaments in the original.

There are other reasons to be skeptical about philosophical reflection instigating change. For some, the apolitical ruminations of philosophers on intrinsic value and nonanthropocentrism are impotent in affecting change, because "political opposition can only be challenged by political means" (Durbin 1992a, 115). For others, environmental philosophy is downright counterproductive, because disagreements among philosophers act to divide those who care about nature and waste valuable energy while industrialization rolls on (Norton ix). The solution, some argue, is for philosophers and activists to collaborate on actual issues (Lemons 188; Durbin 1992a, 115).

Common sense suggests that both positions have elements of truth. As Aristotle (1985, 178) points out, there is no necessary connection between knowing and doing; *akrasia*, or lack of self-control, is the universal human foible of knowing what is right (or wrong), but failing to do it (or doing it) anyway. In the case of the environmental activist, from a Humean (1988, 82–88) perspective, action likely springs from anger and sadness (i.e., sentiment) rather than cool reason. For me, my initial attraction to environ-

mental philosophy was emotional; subsequent philosophical investigation allowed me to make sense of my feelings about human myopia manifested in our maltreatment of natural systems.

But neither is there a necessary disconnection of doing from knowing. Behind every action is an idea. Martin Luther initiated massive social change with his caustic criticism of Roman Catholicism and the pope. Rational speculation can and does foreshadow larger paradigmatic shifts.

Thus theoretical speculation has a role in instigating action by affording people with fresh perspectives. Regarding environmental philosophy, George Allan has accurately described this endeavor as "environmental metaphysics." Environmental metaphysics is concerned not with how ecosystems work, but with possible new kinds of human relationships with them: "Environmental metaphysicians are poets of our worldview and conjurers of its successor; they must know the world intimately in order that it might impregnate them with its likely progeny" (127). Answering Durbin's (1992b, 132) concerns, then, environmental metaphysics addresses the inherently exploitive impulses of the mechanical view of nature. Ascribing mere instrumental value to nonhuman nature undergirds unmitigated industrialization, and industrialization exacerbates social inequities manifested in environmental racism (Westra and Wenz).

The technical concepts of environmental metaphysics can be translated into non-technical language for the interest and edification of reasonably intelligent people. None of my friends want to hear the specialized jargon of Whitehead, but I have had a great deal of success, sitting around campfires in the deserts of southern Utah, riding up ski lifts at Alta, or sitting on the summits of fourteen thousand foot peaks in Colorado, arguing that nature has value above and beyond use-value for human beings. Though I don't mention Whitehead or Ferré, their philosophy has helped me to make sense of why I think this is so. Here is a deep philosophical point which nonphilosophers can understand, and accept or reject without rigorous philosophical training.

For energetic philosopher-activists and nonphilosopher-activists alike, the ontological insights of the human place in nature can be used as a basis for action. By laying the ontological groundwork for connecting the lessons of scientific ecology with ethics through metaphysics, Ferré holds out the hope that can happen. Instead of beginning with critiques of social hierarchies implicit in patriarchies (Warren) and capitalism (Bookchin), or finding inspiration in theology (Linzy, DeWitt), or emphasizing a psychological process of self-awakening (Naess, Devall and Sessions, Fox), Ferré begins directly with the nature of nature, as do Callicott and Rolston. The power of this approach is that metaphysics, if consistent with the empirical observations of ecological science, provides a solid basis for identifying extracultural environmental norms. Happily, the threat of social constructivism

(see Keller and Golley 12–14) does not undermine the project of environmentalism (Soulé 148–54).

What remains to be done is the evaluation of environmental issues from the standpoint of scientific ecology through a kalocentric lens. As personalistic organicism is consequentialistic, the formal calculus of cost-benefit analysis is efficacious (Shrader-Frechette 479). In a public policy issue regarding an ecosystem, for example, the affirmation and negation of various intrinsic and extrinsic values involved in alternative actions are catalogued and weighed. Since we are not ecologically omniscient, our analysis will be incomplete. Even so, our inability to predict all ecological repercussions ought not result in paralysis; if absolute knowledge was a prerequisite for action, none of us would leave home in the morning.

As the relative "amounts" and types of value are qualitative, not quantitative, the decision procedure will not be mathematical. In the above Galápagos illustration, for example, an animal rights liberationist will assign more intrinsic value and less extrinsic disvalue to feral goats than a land ethicist. Nonetheless, such a methodology provides a meta-framework for constructive dialogue.

In short, the twin challenges of locating the human place in nature and identifying the role of philosophical theory in public policy formation is what makes doing environment philosophy such fun and so rewarding. By squarely addressing the first issue, and laying the foundation for the second, Ferré has secured a place in the history of environment philosophy.

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