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Why is Ecological Ethics Necessary?

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Abstract

Field biologists, conservation biologists, and wildlife managers frequently have to contend with difficult ethical questions during the course of their work but have little formal guidance in making such decisions. Existing philosophical approaches fail to take into consideration all the competing values involved in such decisions: environmental, knowledge, and animal life. To address this gap, Minteer & Collins (2008) and others have called for the establishment of a new field, ecological ethics. Here we use the example of prescribed fire as a case-study to illustrate the failure of Singer's animal liberation, Regan's animal rights, Leopold's land ethic, and some newer attempts to answer these questions, in a way that incorporates the interest, needs, and values of different groups involved in environmental research and management. The values involved are multiple, intrinsic, and incommensurable, explaining the intractability of the trade-off problems. Ecological ethics is still in need of a method for addressing these problems, as well as a grounding in moral theory and a nonreductionist ontological account, but at least ecological ethics acknowledges these needs.

Introduction

In a series of papers, Minteer & Collins (2005 a,b; 2008) presented a sampler of moral problems regularly faced by conservation biologists and managers. They observed that these sorts of problems are not well addressed by any current theories within the existing disciplines

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of animal and environmental ethics. Minteer & Collins (2005 a,b; 2008) gave several explanations for this: virulent antipathy to anthropocentrism, moral monism, environmental holism, and obsession with theoretical matters. They called for the creation of a new discipline which they name "ecological ethics." We agree that a new field is needed to handle these problems, and we agree that Minteer & Collins have correctly identified some of the reasons. However, we think that there are more fundamental reasons that explain both the gap and also why it cannot be closed by merely tweaking one or more of the existing disciplines. We also feel that understanding the reasons existing philosophies don't work is an important step in laying the foundations for the new field. By identifying these reasons here, we hope to set the ground for the actual formulation of ecological ethics.

What is special about the disciplines of animal and environmental ethics? One feature that distinguishes these from other applied ethics disciplines is that each attempts to broaden the circle of moral concern[4] to include objects other than humans and their interests. These two *expansion ethics* begin by asserting that not only individual people, but also animals, plants, and ecosystems (and other holistic entities such as species, populations, and biotic communities), have intrinsic or inherent[5] as well as instrumental[6] value (rather than repeatedly listing all of these holistic entities, we shall henceforth use the term "ecosystems"). Moreover, each of them may generate several sorts of intrinsic and/or inherent value. Just as some ethicists may ascribe both the life and the pleasure of individual people intrinsic value, so some animal ethicists claim that both the existence and the welfare of individual animals has inherent value (Regan, 1984; 2001). Similarly, some environmental ethicists, while denying individual animal value, view both the complexity and diversity of ecosystems as having intrinsic value (Leopold, 1949). Expanding the circle of moral concern in these ways produces distinctive sorts of dilemmas. Other disciplines of applied ethics deal with dilemmas, of course, but usually ones in which the values and interests of some people or groups of people are pitted against those of other people: human vs. human dilemmas. The dilemmas

[4] The circle of moral concern is the sum of all individuals and objects that should be considered when making a moral decision.
[5] Moral value in and of themselves or as members of a morally significant group.
[6] Moral value derived from being important to morally significant individuals or groups, but not in and of themselves.

characteristic of the expansion ethics are different: they involve conflicts between people and nonhuman entities or between some nonhuman entities and others (human vs. animal, human vs. ecosystem, animal vs. ecosystem).

Animal ethics has focused upon dilemmas in which the intrinsic value of animals and their interests are pitted against the interests of humans. In his first book on the topic, Peter Singer devoted a whole chapter to what he termed "factory farming" and argued that the modern methods of animal farming are morally indefensible (Singer, 1975). This was his main practical example of why animal liberation was needed. Tom Regan also took issue with other ways humans exploit animals, such as hunting and scientific experiments (Regan, 1984). All of these are cases of conflict between human interests, on the one hand, and animal values and interests, on the other. This type of moral dilemma is now well recognized, and in some cases codified in law, regulated by Institutional Animal Care and Use Committees, and subject to federal inspection and oversight.

Similarly, many of the hard problems in *environmental ethics* are dilemmas in which the value of ecosystems is pitted against the interests of the general public. Although many of the cases can be considered tradeoffs between short-term human gains and long-term human benefits or even survival, and some environmental philosophers claim that anthropocentric and holistic views would lead to similar policies (Minteer & Manning, 2000; Norton, 1984, 2008), some are clear cases of human gain balanced against environmental loss. For example, prescribed fires[7] that aim to improve grazing for cattle or clear areas for construction serve immediate human needs but may come at the cost of ecosystem health. Conflicts between human and environmental benefits arise over issues such as land use or species conservation (Leopold, 1970), genetically modified organisms, climate change, and chemical pollution. In many of these cases, the technologies provide a clear human benefit with no contravening side effects such as health hazards, so from an anthropocentric viewpoint, it is justifiable to harm the environment to gain these advantages. From a holistic, ecocentric viewpoint, however,

[7] Prescribed fires are fires used by managers to restore naturally occurring fire regimes in areas where human action has altered them.

humans are merely members of the ecological community and have no right to harm it, except perhaps to supply vital needs (Newton, Dillingham, & Choly, 2006).

The conflict sparked between animal ethicists and environmental ethicists has practical implications. In several cases, including prescribed fires for restoration in Chicago (Gobster, 1997), conservation biologists and animal rights advocates squabbled over proposed policy. A few have even taken their cases to court (Genovesi & Bertolino, 2001; Perry & Perry, 2008).

In the following paper, we explain the fundamental reasons that the two areas of expansion ethics fail to agree in areas where both apply. We sketch one traditional environmental ethics view and two animal ethics views. We also look at two attempts to incorporate animal and environmental views into a single ethical frame, one closer to animal ethics, the other to environmental ethics. We then show how and why each of those does not accommodate the other's insights, illustrating our analysis using the example of prescribed fires.

Land Ethic

Aldo Leopold was an ecologist and a forest service employee rather than a philosopher. *The Land Ethic*, the formulation of his environmental philosophy, was originally published posthumously (Leopold 1949). Leopold's environmentalism is suggestive rather than systematic. He advances a holistic approach to ethics that includes all elements of the environment, biotic as well as a-biotic, in the circle of moral concern. In his view, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (Leopold, 1949). Not the interests of individuals, but the integrity, stability, and beauty of the whole community are the standard for moral action.

J. Baird Callicott, a leading environmental ethicist, developed Leopold's ideas further and in a more systematic way. He acknowledges that ecology is an evolving science and that our understanding of "integrity, stability, and beauty" may, and has, changed since Leopold's time.

He calls for a "dynamic" interpretation of Leopold's maxims in light of developments in the science (Callicott, 2002).

In "Animal liberation: A triangular affair" (Callicott, 1992), Callicott argued that "There are intractable practical differences between environmental ethics and the animal liberation movement." He further claims:

> An imagined society in which all animals capable of sensibility received equal consideration or held rights to equal consideration would be so ludicrous that it might be more appropriately and effectively treated in satire than in philosophical discussion. The land ethic, by contrast, even though its ethical purview is very much wider, is nevertheless eminently practicable, by reference to a single good, competing individual claims may be adjudicated and relative values and priorities assigned to the myriad components of the biotic community.

According to him, the interests of the individual animals are reduced to parts of, and if necessary, sacrificed to benefit the interests of the ecosystems of which they are parts.

Callicott (1992) acknowledges the intrinsic value of animals by accepting a hierarchical account of degrees of moral consideration. In his view, the closer one's relationship to the subject considered, the higher the moral value one should assign to that subject. For example, family members would have a higher moral claim over a person than complete strangers. Since domestic animals are more closely related to people than are wild animals, they deserve a higher level of moral consideration. This nonetheless fails to resolve animal vs. ecosystem dilemmas in a way acceptable to those who take seriously the intrinsic value of individual animals. Since there are so many other circles of moral consideration that are closer to us, according to Callicott (1992), the moral significance of the lives and interests of wild animals are functionally denied because any nontrivial interests of those closer to us will end up trumping the interests of wild animals. Even though we should consider these animals to be morally valuable, we are prohibited from sparing them if the interests of people in a nearer circle would thereby be set back or neglected.

Another fundamental obstacle that prevents the land ethic from adequately handling ecosystem vs. animal dilemmas is the scale difference. Ecosystems are composed of individual organisms as well as other entities such as soil and plants, so that in practice their wellbeing typically trumps the welfare of any individual animals (even if these individuals are not parts of the ecosystem) whenever conflicts arise. Functionally, land ethicists cannot take seriously the assignment of intrinsic value to anything besides holistic collections such as ecosystems.

One interpretation of Leopold's land ethic that has received much notice is Brian Norton's "Convergence hypothesis," or "weak anthropocentrism," in which he suggests that for all intent and purposes, ecocentric views and anthropocentric ones would lead to similar, if not identical, policy recommendations (Norton, 1984; 1998; 2009). Norton also claims that Leopold was a pragmatist and not necessarily the holistic environmentalist philosopher Callicott suggests (Norton, 1999).

The Convergence view has been argued and debated since its introduction (McShane, 2008; Minteer & Manning, 2000; Norton, 2008; Saner, 2000; Varner, 1994), and more recently in a book (Minteer, 2009). The claim that policy decisions will eventually become more environmentally centered as our understanding of human dependence on the environment increases does not seem to withstand the test of time. But on the main issues relevant to prescribed fires, the differences between Norton and Leopold/Callicott may be minimal. Norton acknowledges that environmental management is science driven, even as the science is evolving (Norton, 1999).

The one place Callicott's version of the land ethic would diverge from Norton's is on issues of conflict between human and environmental interests. Here Norton would claim that human interest and environmental interest converge, so ultimately, there is no conflict. Clearing forests for agriculture is a good example where this claim does not seem to work. We are still clearing vast areas of tropical rainforests for grazing even though it is clear that this harms the environment, reduces biodiversity, and that these lands are not very good for raising cattle. Callicott, drawing on Leopold (and historical precedence), would say that conflict may arise,

and that we should evaluate both human and environmental values when making such moral considerations.

Justification for the use of prescribed fires stems from a holistic view that assumes that some processes are essential for the wellbeing of the ecosystems, communities, species, and/or other complex components of the biosphere. This is consistent with Leopold's land ethic, as interpreted by Callicott and others. As one of the fathers of the American conservation movement and science, it is not surprising that the common practices of this field are justified by his philosophical view. The change in attitude, from prevention of fires in the mid-twentieth century to the adoption of prescribed fires as an attempt to recreate natural processes, was the result of accumulated data suggesting that by suppressing fires we have not eliminated a destructive element. Instead, we have halted a form of disturbance that fuels regeneration and growth. This again is consistent with Leopold's view that scientific understanding of the processes is essential for an environmental ethic (Callicott, 1987).

What land ethicists do not address is the suffering of individual animals harmed directly by the fire and indirectly by the habitat change resulting from the fire. Since land ethicists are concerned with wholes such as ecosystems, individual interests are not high on the list of considerations. In this view, even minimal ecological gains would trump any consideration of individual suffering, even if a large number of animals are affected.

Animal Ethics

Animal liberation

Although as a utilitarian he was not himself a rights ethicist, Peter Singer's publication of *Animal Liberation* in 1975 is generally considered the birth of the modern animal rights movement. Simple utilitarians maintain that acts are moral if and only if they maximize (or produce enough of) a single value. In its original form, Singer's animal liberationism (1975) was a straightforward application of this simple utilitarianism to animal ethics. He considerd the maximization of happiness and reduction of unhappiness to be the only true moral

considerations. This enabled him to give moral consideration to animals, for (at least some) animals can be happy or unhappy. The flip side of his simple utilitarianism leads Singer to dismiss the idea that plants, species, or ecosystems merit moral consideration: since they lack desires and cannot feel pleasure or pain, plants, species, and ecosystems lack moral standing. Grounded in moral egalitarianism, all pain and suffering caused by an act should be taken into account when considering the morality of that act. Therefore, any sentient being (regardless of how one is defined, an issue under much debate) possibly affected by an act should receive equal consideration although they may be weighted differentially since the affect may vary. One individual may be less affected by an identical act than another. For example, losing an arm could be devastating to any human, but to a sculptor the impact would probably be much greater than for the average human.

In later development of his view, Singer moves to a preference utilitarianism (Singer, 2003), especially when dealing with higher species where preference and desires can more easily be argued for, and their fulfillment, or failure to achieve them, may have a notable effect on the individual. According to Singer's preference utilitarian view, the lives of "persons," which defined as "rational and self conscious beings, aware of themselves as distinct entities with a past and a future" (1993, pp. 110-111), are irreplaceable and therefore killing one person to benefit others cannot be justified even if happiness is gained. For that reason, he admits that a human child's life (a person) would normally have greater value than an animal's (Singer, 1993), because the child's aspirations and desires are more complex than an animal's. Nonetheless, animal suffering is not to be ignored or automatically trumped by human interests. The satisfaction of animal desires should still be considered equally to human desires, but a more complex human life likely produces a more complex web of aspirations and desires, which together may have greater moral worth than an animal's.

Animal liberationists initially seem to be open to the idea that ecosystems possess intrinsic moral value. Singer (1993) wrote that "Once we take the need to preserve our environment seriously, motor racing and water skiing will no more be an acceptable form of entertainment than bear-baiting is today." He further argued that the need for conservation of ecosystems outweighs the economic benefits of continued development. However, for Singer the

environment is valuable only insofar as it enables and enriches human and animal survival and their enjoyment of life. Great as this value may be, the environment itself has no intrinsic value.

Animal rights

Like Singer's animal liberation, Regan's (1984) animal rights view derives from a more general theory, one that argues that individuals have rights that should always be respected. Reagan's animal rights view is a straightforward application of this sort of simple deontology to animal ethics. Regan (1984; 2001) bases his animal rights ethic on the claim that some animals are "subjects of a life" and as such are entitled to some rights. Regan, following traditional rights ethicists, argues that all moral agents (individuals who are able to understand and make moral decisions) have rights. But unlike most rights philosophers, who stop at moral agents, Regan argues that rights should be granted to another category of individuals—"subjects of a life" who should also be treated as "ends in themselves" (Regan, 2006). Subjects of a life are individuals who comply with criteria for certain psychological capacities. These capacities include:

> ...beliefs and desires; perception, memory, and a sense of the future, including their own future; an emotional life together with feelings of pleasure and pain; preference—and welfare—interests; the ability to initiate action in pursuit of their desires and goals; a psychophysical identity over time; and an individual welfare in the sense that their experiential life fares well or ill for them, logically independently of their being the object of anyone else's interests. (Regan 1984, p. 243)

Some animal rightist may have different views on what characteristics of animals are essential for them to be morally considerable, but no animal rightists take seriously the claim that larger wholes such as species, populations, and ecosystems possess inherent moral value (Sunstein & Nussbaum, 2004). Like simple consequentialism, simple deontology cannot allow for the intrinsic or inherent value of ecosystems. Ecosystems have no agency of any sort. This fundamental obstacle blocks animal rightist from adequately handling animal vs. ecosystem dilemmas. Regan, a leading animal rights philosopher, dismissively wrote of environmental ethics: "It is difficult to see how the notion of the rights of the individual could find a home

within a view that, emotive connotations to one side, might be fairly dubbed 'environmental fascism'" (1984). It is hard to ascribe needs, aspirations, autonomy, or desires to such wholes, so the Kantian assertion of moral standing based on autonomy and the later developments that base rights on moral agency or on "subject of a life" status, cannot be applied to ecosystems. Regan said that "The rights view does not deny the possibility that collections or systems of natural objects might have inherent value ... The beauty of an undisturbed, ecologically balanced forest, for example, might be conceived to have value of this kind" (1984). However, he acknowledges that ascribing rights to such collections in a meaningful way has never been done, and it is difficult to envision a mechanism that would enable such a move (Regan, 1984, pp. 359–363).

Even if ecosystems did possess intrinsic moral value, this would not be enough to accommodate the concerns of the environmental ethicists within this ethical realm, since rights trump other considerations. Rights might be violated in order to preserve higher-priority rights, but they shouldn't be violated for any other reason. In particular, we must avoid rights violations regardless of the cost to non–rights-bearers. Thus, if individual people and animals have rights, and wholes such as ecosystems have no rights, then individual animals may not be harmed in order to preserve or study ecosystems, even if ecosystems have some sort of intrinsic or inherent value. When considering the question of saving endangered species, one that is crucial for environmentalists, Regan (1984) argued that the death of one individual member of a numerous species could trump the survival of even thousands of individuals of an endangered species, if that individual's loss is greater than any of their individual losses. This is a moral judgment that environmental ethicists cannot accept, and one that seems paradoxical. A possible explanation for this is that the single individual may suffer a greater loss than any of the individual members of the species since it is a higher form of life and its life is richer and more valuable. A human would lose more than a cat and a cat more than a bird, for example. Thus, the imminent extinction of an invertebrate species might not justify the death of a single, common bird preying upon them. This is even more crucial if our hypothetical predator has to be actively killed by managers. Actively killing the individual predator is a violation of a right, whereas not assuring that the endangered invertebrate species can produce a viable population is not.

For Regan, the morality of a prescribed fire depends upon its effects on subjects of a life. If individuals that are subjects of a life use and enjoy the area that is to be burnt, than doing so will probably be an infringement of their autonomy. Unlike Singer, burning areas containing only sentient non–subjects-of-a-life would be acceptable to Regan. However, since all mammals are considered subjects of a life, and rodents are present in most areas with vegetation that can be burnt, it is very unlikely that areas exist in which prescribed fire is acceptable.

Animal rightists and animal liberationists are concerned with individuals, both humans and nonhuman animals. Often the activists demonstrating against management plans are working on an emotional level, fighting for poor "Bambi's" life, and not always out of a philosophical ethical view. But if we look at prescribed fires, both animal rights an animal liberation views would generally oppose them, for slightly different reasons and with different exceptions.

Because only individuals that have needs and desires are moral subjects in the view of animal liberationists, the improvement of environments at the expense of individuals is morally unacceptable to them. Thus, animal liberationists will generally oppose the use of prescribed fires in any habitat that contains sentient beings. Fires will not only endanger their lives, but will cause suffering, stress, reduction in food availability, and many other indirect effects that will reduce the overall happiness of affected individuals. In all likelihood, the immediate results of fire will outweigh the projected positive effects to other individuals. But if care is taken to minimize suffering, by temporarily removing populations, for example, and the project is designed to improve habitat for animals, then there is a chance for an increase in overall happiness, or fulfillment of interests, and animal liberationists would approve of the fire.

Animal rightists will also object to prescribed fires because they violate basic rights of individual subjects of a life. However, unlike animal liberationists, burning areas containing only sentient non–subjects-of-a-life would be acceptable. Regan's philosophy (1984) would

not consider the possible gains to other subjects of a life from the fire, or even benefits for humans, since positive outcome cannot outweigh the infringement of individual's rights, which is what Regan termed "ecological fascism."

Attempts at resolving the environment/individual–animal conflict: Anthropocentric individualism

In 1998 Gary Varner published "In Nature's Interests?" in which he outlined what he coined an "axiologically anthropocentric" view. This is a development of Singer's preference utilitarianism into a more anthropocentric view. Varner achieves this not by denying the value of animal interests, but by giving greater value to "ground projects," which he claims are "... the most inclusive of all interests, interests that only human beings (and, perhaps, a very few other higher mammals) have" (Varner, 1998, p.79).

Although this may seem similar to Singer's view of the complexity of human desires, the difference is that Varner gives this category (adopted from Bernard Williams) of interests a greater moral worth in and of itself, regardless of its content, by formulating a principle that grants the satisfaction of ground projects greater importance than other desires (Varner, 1998, pp. 88–93).

Varner addresses the conflict between animal and environmental philosophies, arguing that both animal liberationists and animal rightists should support therapeutic hunting (population control of an over-abundant species through hunting to reduce environmental degradation) of individual animals when nonlethal methods of reducing populations are not available. He agrees that it is easier for utilitarians to accept this than for deontologists. Regan actually rejected any justification for hunting (Regan, 1984), but Varner claims that a rights view should not be separated from facts and that in the case of therapeutic hunting where non-lethal alternatives are not available, rightists too should not rule hunting out categorically (Varner, 1998, pp. 111-115).

Although this view seems to support environmental concern, it does not ascribe any value to species, populations, or other collectives. It is still an individual's desires that have value, and only when environmental harm conflicts with the fulfillment of these interests would they be considered problematic. The environment is viewed as a tool, and the use of this resource, depends only on the better fulfillment of interests and not on its integrity or wellbeing. Varner's version of anthropocentric individualism would be more open to environmental improvement at the expense of individual organisms. This view also recognizes complex human projects such as conservation as morally valuable, but it still focuses on individual interests. Because the conservation of wholes such as species and ecosystems bares no moral significance, unless the fire would clearly result in greater benefit than harm to sentient beings, he would not justify the use of fire. Moreover, urbanization is also a ground project. Human expansion may trump animal interests when land development is considered.

Respect for Interests

Lawrence Johnson's "A Morally Deep World" (1991) is an attempt to solve the animal–environmental conflict from the holistic perspective. Johnson accepts that individual interests should be respected, including those of animals (Johnson, 1991, pp. 118–132). But he goes on from there to claim that wholes, such as humanity, species, and ecosystems, have interests too. He argues that *Homo sapiens* is more than a collection of individual humans. Since maximizing the satisfaction of individual interests leads to "unpalatable results," Johnson concludes that "the better way would be to recognize that there is more of human moral significance than individuals and individual interest satisfaction" (1991, p. 152). Humanity as a whole is an entity that has interests, these interests are morally significant, and therefore humanity as a whole has moral significance independent of the moral value of the individuals comprising it and their interests.

After establishing humanity as an entity with interests and moral significance, Johnson determines that other species are entities too, and that they too have interests separate and

above the individual interests of the organisms that comprise it. A species, he claims, can flourish or suffer independent of the suffering or flourishing of its individual members (1991, p. 157), which makes species, and not just humanity as a specific species, morally significant. From there it is a small step to say that ecosystems and other assemblages should be viewed in a similar fashion and ascribed interests and moral significance.

Responding to Regan's concept of "environmental fascism," Johnson replies that ascribing moral significance to wholes does not necessarily excludes individuals and their interests from being morally considered. On the contrary, he claims that "what we must not do is fall into the trap of thinking that we must choose between accepting individual values or accepting holistic values. Not only can we have it both ways, we *must* have it both ways" (1991, p. 178) [italics in the original].

However, other than saying that we must have it both ways, Johnson doesn't give any guidelines for working out conflict cases. He even admits that he cannot come up with a concrete set of rules, and calls for a shift in attitude, adopting an attitude of respect to the biosphere at all levels. Nevertheless, as we will demonstrate with the prescribed fire example, this does not solve the dispute between individual animal rights and holistic environmental concerns: it only tells them that they are both right.

It isn't clear what Johnson would say about the use of fires as a management tool. As he admits he does not supply us with any clear set of rules to determine the ethical course of action in such conflicts. All we can take from him is that we should consider individual interests as well as holistic ones. We believe that land ethics would also consider individuals. If a choice could be made between two possible management plans, than, other things being equal, we believe a land ethicist would prefer the plan that caused less distress and suffering to individuals. The argument is not whether animal pain and suffering is bad, it is whether environmental goods outweigh them. Land ethicists believe that they do, and Johnson does not help us in setting a clear line for how to balance the two.

Conclusion

The broadening of moral concern attempted by the two expansion ethics—animal and environmental ethics—makes possible further sorts of dilemmas, but none of these ethical schools can handle overlap cases in ways that accommodate the insights of the other. Instead, each simply or functionally rejects the value claims of the other. This is where *ecological ethics*, which is explicitly aimed at dealing with overlap situations, needs to come in. It should focus upon situations involving several sorts of entities (animals, ecosystem, and knowledge) and acknowledge their corresponding incommensurable moral values. From the beginning, ecological ethics will bring appreciation of all sorts of values to bear on overlap situations. The action-guiding directives of ecological ethics should explicitly take appropriate account of all values.

Why is each of the two expansion ethics unable to adequately handle situations within the overlap areas? After all, dilemmas in which diverse interests are pitted against each other are common within all disciplines of applied ethics. Should a state use eminent domain to acquire a house in order to build a road? The interests of the owner, the drivers, and the state are all in play, but it is unnecessary to create the disciplines of owner ethics, driver ethics, and state ethics, let alone owner-driver-state-ethics. The reason is that four different reductionisms present alternative paths to a resolution of the dilemma.

The first reductionism states that wholes are just the sums of their parts. The state is nothing over-and-above the collection of its many residents. Thus, there are no advantages or disadvantages to the state over-and-above the extra convenience for various drivers produced by building the road and the losses or gains to the owner. In the second, parts are just parts of the whole. Individuals are nothing on their own; they are no more than parts of the state. Thus, the advantages or disadvantages to the drivers and owner are subordinated to the interests of the state. Third, wholes and parts are both related essentially to something else. Both the state and the individuals are best understood in terms of some third thing. For example, all are "contributors to progress" or "parts of civilization." Lastly, a common

denominator is available for reconciling conflicts. Even if the state is more than the sum of its citizens, the citizens are more than just parts of the state, and neither is "part" of some third entity; their gains and losses may be balanced through the use of a common measure such as money.

Reductionist solutions parallel to the four sketched above enable other applied ethical disciplines (e.g. biomedical ethics, engineering ethics, and accounting ethics) to handle dilemmas occurring among their several spheres of application. Similar solutions have also been proposed with respect to the ecosystem vs. animal dilemmas. Alas, none of the reductionisms sketched above can reconcile the theories of environmental ethics and animal ethics in overlap situations since each of these expansion ethics fails to acknowledge the intrinsic values central to the other. The prescribed fire case illustrates that animal ethicists attach no intrinsic value to ecosystems, species, and other large wholes that are crucial to the land ethic. The latter functionally does not value individual animals that are the main consideration for animal ethicists. Everyone agrees that animals and ecosystems have instrumental value, but persuading people of their intrinsic value is quite difficult, for this claim goes against human history, interests, intuitions, and perhaps even evolutionary biology. To get their programs off of the ground, animal ethicists and environmental ethicists have had to struggle against pervasive anthropocentrism; they have had to engage in consciousness-raising as well as philosophy.

Perhaps animal ethicists and environmental ethicists have been so focused on merely establishing the moral value of their own discipline that they have been too distracted to appreciate the values championed by each other. But we have argued that there are more fundamental problems. These expansionist ethical theories cannot simply stretch a bit, add an epicycle, and incorporate each others' value claims because they do not stand alone. Instead, theories of animal ethics are blocked from acknowledging the moral value of ecosystems by the general moral theories from which they spring, and theories of environmental ethics are blocked by the holistic nature and complexity of the entities to which they relate. Thus, animal and environmental ethicists give lip service to each other's values, but do not acknowledge these values at a gut level. This is why they do badly when encountering situations involving

the values championed by each other. They do not take seriously the fact that certain dilemmas arise from conflicts among multiple, intrinsic, and incommensurable values. By contrast, this fact is the starting point from which ecological ethics eventually issues action-guiding injunctions.

The striking thing about tradeoff problems is the difficulty of saying something both general and plausible about how to solve them. That the values involved are multiple, intrinsic, and incommensurable explains the intractability of the problems. Ecological ethics is still in need of a method for addressing these problems, as well as grounding in moral theory and a nonreductionist ontological account, but at least ecological ethics acknowledges these needs. That is a step forward.

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