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31. Aldo Leopold, *A Sand County Almanac* (New York: Oxford University Press, 1949), pp. 224-25.
32. Callicott, "A Triangular Affair," p. 326 (emphasis mine).
33. Edward Abbey, *Desert Solitaire* (New York: Ballantine Books, 1968), p. 20.
34. Garrett Hardin, "The Economics of Wilderness," *Natural History* 78 (1969): 176.
35. Callicott, "A Triangular Affair," p. 323.
36. Ibid., p. 335.
37. John Rawls, *A Theory of Justice* (Cambridge, Mass.: Harvard University Press, 1971).
38. Richard Levins and Richard Lewontin, "Dialectic and Reductionism in Ecology," *Synthese* 43 (1980): 47-78.
39. Here we would have an inversion, not just a rejection, of a familiar Marxian doctrine—the labor theory of value.
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42. Donald H. Regan, this volume.
43. Routley and Routley, "Human Chauvinism," pp. 121-22.
44. Ibid.
45. I am grateful to Donald Crawford, Jon Moline, Bryan Norton, Robert Stauffer, and Daniel Wikler for useful discussion. I also wish to thank the National Science Foundation and the Graduate School of the University of Wisconsin-Madison for financial support.

## 8

## Duties of Preservation

DONALD H. REGAN

## I. THE PROBLEM

The central philosophical problem concerning our duties with regard to nature is this: We are strongly inclined to think we have certain duties which are not fully accounted for by instrumental arguments. We are also strongly inclined to hold a view about value that seems to make it impossible to account for these duties by any noninstrumental arguments. Hence our perplexity.

It seems that we have duties to respect living creatures; to avoid causing the extinction of species; even to preserve complex parts of the environment such as a tropical rain forest or the Grand Canyon. If we ask how we can account for these duties (which for convenience I shall refer to collectively as duties of preservation), one possibility is to list the benefits that accrue to us from acknowledging them. There are powerful instrumental arguments for preserving tropical rain forests, which are central to the whole planetary ecology. There are colorable arguments for the general preservation of species, since currently obscure species can turn out to yield new drugs or new genetic material for agricultural exploitation. There are more sophisticated arguments of potentially unlimited application based on "aesthetic utility"—we should preserve particular natural features or particular species because they embody qualities we value or because we find them pleasing. Instrumental arguments like these are numerous, varied, and significant, but they do not satisfy us entirely. They entail the consequence that if a species is not ecologically essential, and if it will produce no wonder drug or wonder crop, then whether we have a duty to preserve it depends on whether we like it. The content of our duties of preservation will depend heavily on accidental features of human preferences. This seems wrong. Analogously, even in the case of the tropical rain forest, whose present "economic" utility is not in doubt,

it seems wrong to claim we should preserve it merely because it is essential to our carrying on our lives and pursuing our goals and satisfactions, whatever they may be. The day may come when we can abandon this planet and dispense with the rain forest. We do not believe, however, that on that day it will become a matter of moral indifference whether we destroy the forest. Our duties of preservation demand a more solid foundation than our own changeable needs and fancies.

On the other hand, suppose we try to account for duties of preservation without such instrumental arguments. It seems we must claim the natural world is valuable in itself. Unfortunately, that claim conflicts with another common intuition, that the existence of value depends somehow on the existence of fairly sophisticated consciousness. If we imagine a universe in which there is no life form higher than the nematode, and if we ask whether it is better for that universe to exist than for there to be nothing at all, many of us would be inclined to say that it is not better—between the existence and the nonexistence of such a universe, there is nothing to choose.<sup>1</sup> I do not say at this point that the existence of value depends on the existence of human beings. If value depends somehow on consciousness, then it remains to be determined what level and type of consciousness is required and whether we are the only creatures that possess it. But these questions are not crucial here. Our duties of preservation seem to extend to natural entities that plainly do not have conscious lives of their own of any sophistication—the nematode, the lousewort, the Grand Canyon. It is hard to see how we can explain the duties of preservation in a noninstrumental fashion without claiming these entities are valuable in themselves and thereby contradicting the intuition that value and consciousness go together.<sup>2</sup>

## II. ON NOT AVOIDING THE PROBLEM

The problem, then, is to give a noninstrumental account of our duties of preservation without denying the connection between value and consciousness. We could, of course, avoid the problem without solving it. We could deny the supposed duties of preservation, or we could grant intrinsic value to entities which lack consciousness. I propose to solve the problem, not avoid it. However, my solution may seem so implausible as to suggest that one of the courses of avoidance must be preferable. I therefore want to say something against each of the courses of avoidance. It will make for the smoothest exposition (even though it will upset the symmetry of the presentation) if I say a bit more now about the connection between value and consciousness and put off until much later my reasons for not simply denying duties of preservation.

With regard to value and consciousness, I propose to look briefly at three standard attempts to explain duties of preservation and to show that while none of them is satisfactory, each of them achieves what plausibility it has by arguing in a way which tends to impute consciousness where it does not exist. The lesson is that hardly anyone is willing to face the claim that value depends on consciousness and deny it outright.

(1) It is often said that a variety of nonhuman entities—animals, plants, rivers, the “biotic community”—have rights. That such claims should be made was inevitable; “rights” have become the philosophers’ stone of modern moral discourse. Unfortunately, we have no satisfactory understanding of what we mean even by claims that humans, the paradigmatic right-holders, have rights. It is this basic lack of clear understanding that encourages claims about nonhuman rights.

It often seems that claims about Jones’s rights are merely disguised claims about other people’s duties regarding Jones.<sup>3</sup> If talk about rights is merely disguised talk about duties, then rights cannot be the basis for duties. This is as true of duties regarding nature as of duties regarding humans. On the other hand, if we try to find a notion of rights that has enough substance to be a genuine basis for duties, we are driven to thinking about rights as protections of some sort for the activities of rational, moral agents. It is clear that few or no nonhuman entities have rights of this sort.

What I have said makes it clear that talk of nonhuman rights serves no useful purpose, except perhaps in rare cases. Such talk survives because our fuzzy-mindedness about the nature of rights allows assertions about rights to seem significant when they are not, when they are mere covers for assertions about duties. The seeming significance depends on the suggestion, easily recognized as false in the case of almost all nonhumans once it is made explicit, that the supposed right-holder is a rational, moral agent.

(2) It is often said that we have duties to every living creature because every living creature has “a good of its own.”<sup>4</sup> This argument does nothing to explain any duties we might have to inanimate nature. Beyond that, the argument gets a good deal of its apparent force by inviting confusion.

Consider an oak tree. If someone who says that an oak tree has a good of its own is pressed to justify that claim, he will usually respond by pointing out that an oak tree is a complicated, self-regulating, self-sustaining system. Now, if that is what it means to say that an oak tree has a good of its own, I agree that an oak tree does have a good of its own. But why does it follow that I have any moral duty regarding the oak tree? The claim must be that, other things being equal, I should not

interfere with complicated, self-regulating, self-sustaining systems. As it happens, I think this claim has some plausibility, for reasons that will become clear further on. Even so, this claim is no place to end the argument for duties regarding nature. It is at most a suggestive place to begin.

The real problem with saying that an oak tree has "a good of its own" is that it leads us almost inevitably to think of the oak tree as engaged in conscious valuation and in conscious striving after the "good" it has chosen or acknowledged. Hardly anyone would make such claims about the oak tree outright. But there are considerable illicit benefits (from the point of view of one trying to justify duties regarding the oak tree) from having these ideas in the air. Thinking of the oak tree as a valuer helps us over our worry about how there can be value in nature considered totally apart from human beings (or rational consciousness). We can concede that the existence of value requires a valuer, but we can let the oak tree fill that role. The idea is that each living thing creates the value in its own life by valuing it. Also, we readily think we should not try to impose our views of the good on other people; each person has a right to "a good of his own" which others should respect. If so, and if an oak tree has a good of its own, then it seems we should respect that too. These benefits are, as I said, illicit. The oak does not engage in conscious valuation. If we think it important that an oak tree is a complicated, self-regulating, self-sustaining system, let us say that about the oak tree and then argue about why it matters. Let us avoid specious shortcuts. (What I have said in this section applies *mutatis mutandis* to claims that every living creature has "interests," or that every living creature is a center of a respect-demanding "will.")

(3) It is often said that we are members of a "global community" which includes, in addition to ourselves, all other living creatures from chimpanzees to blue-green algae, and it is said that we have duties to the other members of this community just as each of us has duties to other members of the human community.<sup>5</sup> However, "community"—in the only sense in which it can possibly have any moral significance—requires at least the potential for shared beliefs and values. The universe of living creatures simply does not amount to a community in any morally relevant sense.

The "global community" usually turns out to be a metaphor for the fact that all life is part of a complex ecological web. We are dependent on many other species; and almost every other species (perhaps absolutely every other species) is dependent on us in the sense that we could destroy it if we tried. What follows from these facts? Nothing of interest. Our power to affect other species may be a necessary condition for our having duties regarding them; but the mere fact of our having this power does

not tell us what duties we have, if any, in the use of it. Similarly, our dependence on other species means that if we do too much damage to other living things we are likely to end up hurting ourselves as well; but any argument from this premise will make our duties regarding nature instrumental, which is just what the argument from global community was meant to avoid.

### III. THE SOLUTION

It is time now to introduce my own solution to the problem of justifying noninstrumental duties of preservation without denying the connection between value and consciousness. I shall borrow an idea from G. E. Moore. The idea is best introduced by considering a specific example. There is a natural "object" which is the Grand Canyon. Many people know of the existence of the Grand Canyon and have some specific knowledge of it. Consider a person Jones, who has some knowledge of the Grand Canyon and who also takes pleasure in that knowledge. Moore's idea is that we should regard as intrinsically valuable the *complex* consisting of the Grand Canyon, plus Jones's knowledge of the Grand Canyon, plus Jones's pleasure in her knowledge of it.

It must be emphasized that what is valuable here comprises three things—the Grand Canyon, Jones's knowledge, and Jones's pleasure in her knowledge of the Canyon—when they occur together. The valuable entity is what Moore called an "organic unity." The claim that this unity is valuable does not, at least on the face of it, entail that any individual element is valuable on its own. In particular, it does not entail either that the Canyon is valuable on its own or that Jones's pleasure is valuable on its own.<sup>6</sup>

The phrase "Jones's pleasure in her knowledge of the Canyon," which I have used to describe one element of the valuable complex, may be misleading. It suggests that Jones's pleasure is in her knowledge alone, and not in the Canyon. It suggests that Jones is glad to know about the Canyon, given that it is there, because she likes knowing about what is there, but that she is otherwise indifferent to the existence of the Canyon. That is not the state of mind I want Jones to have. I want Jones to take pleasure in the existence of the Canyon itself. Why, then, do I not use the phrase "Jones's pleasure in the existence of the Canyon"? Because that also may be misleading. This latest phrase suggests that, so long as Jones knows there is a Grand Canyon, and is glad of that, it does not matter whether Jones knows or cares to know anything more about the Canyon. On my view, however, Jones ought to want to know as much about the Canyon as possible; and she ought to take greater pleasure in

knowing it more completely; and the more she knows the more valuable is the complex under discussion. Perhaps, then, we should speak of "Jones's pleasure in the existence of the Canyon and in her knowledge of it." This is an improvement, but it still could be taken to refer to two separable pleasures in two separate things, the Canyon, and Jones's knowledge of it. The misleading suggestions of the previous inadequate phrasings are not suppressed entirely. Perhaps the best description of Jones's state of mind would be "Jones's pleasure in the Canyon as known to her." The only trouble with this is that it sounds rather artificial. We would hardly know what it meant if it did not come at the end of a paragraph of hair-splitting. Hereafter I shall use all the phrases I have discussed indiscriminately. I shall always mean by them what I would mean by "Jones's pleasure in the Canyon as known to her"—that is, a pleasure in the Canyon and in Jones's knowledge of it as an inseparable whole, and a pleasure which would be magnified by greater knowledge.

So far I have described one thing, a complex involving the Grand Canyon and Jones, which I have claimed is intrinsically valuable. Shortly I shall give a recipe for constructing enormous numbers of valuable complexes along the same lines. First, however, let me say a bit about what it means to call something "intrinsically valuable."

To say something is intrinsically valuable is to say that it is good in itself, abstracting from its causal antecedents or consequences, and abstracting from its relationships to other things. It is good just for what it is. A universe which contains it is the better for containing it (still abstracting from causes, consequences, and external relationships).

*If something is intrinsically valuable, then any moral agent has a moral reason to try to bring it into existence or to preserve it if it exists already.* Of course, to say a moral agent "has a moral reason" to promote the existence of something is not to specify the strength of that reason; and it is not to say that the agent has a *conclusive* moral reason. Two things may both be intrinsically valuable, and yet one may be more valuable than the other. If we must choose between the existence of two valuable things, of different value, we have "a reason" to promote the existence of each, but we have the stronger reason, and thus the conclusive reason, other things being equal, to prefer the existence of the more valuable. Similarly, something may be intrinsically valuable and also be instrumentally valuable or instrumentally disvaluable. (Of course, this instrumental value or disvalue must ultimately depend on the intrinsic value or disvalue of something else.) We may have a conclusive reason, all things considered, to avoid creating or even to destroy some complex of great intrinsic value, if its existence has sufficiently bad consequences. All of this is elementary; but people sometimes assume that if a thing

has intrinsic value it must have "absolute value" (either infinite value or value that for some other reason cannot be weighed against competing values), or else they assume that if a thing has intrinsic value it cannot have instrumental value or disvalue as well. These are misconceptions.

How does one go about showing that something has intrinsic value? One does it in exactly the same way one demonstrates any other fundamental moral proposition, however that is. I do not claim to know how that is. I do claim that the widespread belief that propositions about the good are harder to demonstrate than propositions about rights and duties is the merest prejudice. For the present what we can do is to expose and avoid outright confusions; to consult our moral intuitions; and to see which intuitions (at all levels of particularity or generality) figure in the most coherent moral theory we can come up with.

Very well, what other complexes, constructed on the model of the Grand Canyon-Jones complex, are intrinsically valuable? Clearly, if we replace Jones by any other human being, the resulting complex will still be valuable if the original one is. Indeed, if we replace Jones by any other conscious agent capable of having the same sort of knowledge of the Canyon and taking the same sort of pleasure in it as Jones does, the resulting complex will still be valuable. The interesting question is what we can put in the place of the Grand Canyon. I do *not* suggest that we can put in the place of the Grand Canyon anything at all which we can refer to with a definite description. I would not, for example, claim that the complex consisting of Smith's cruelty, plus Jones's knowledge of Smith's cruelty, plus Jones's pleasure in her knowledge of Smith's cruelty, is intrinsically valuable.

On the other hand, I suggest that we can put in the place of the Grand Canyon any "natural object." "Object" here is to be construed broadly, as including anything we can refer to with a definite description. Thus, natural objects include individual creatures, species, individual ecosystems, types of ecosystems, geological formations, and natural processes (everything from "the way prokaryotes exchange energy with their environment" to "the way continents have been created and destroyed by plate tectonics"). Pions and muons are natural objects, and so is the process of heavy-element formation in stars. In saying that all these things are natural objects, I do not mean to be making any controversial metaphysical claim. I am saying only that every one of these things can be part of an intrinsically valuable complex if it is conjoined with some human being's knowledge of it and that human being's pleasure in her knowledge. (I shall speak for now as if the only relevant knowers are human beings.)

With Moore's idea, as I have elaborated it, in hand, we have the

materials for an argument for the preservation of any natural object. Any natural object can be part of a valuable complex if we know the object and take pleasure in our knowledge. As to any such complex, we have a reason to promote its existence. If the existence of the object is essential to the existence of the complex, then we have a reason to promote the existence of the object. So we have a reason to preserve any natural object that currently exists.

Now, consider some particular natural object. Someone might say: "Unless we know the object and take pleasure in our knowledge, the object's mere existence is not valuable. Therefore our having a reason to preserve the object depends on our knowing it and taking pleasure in it. We have no reason to preserve an object we do not know, or that we take no pleasure in. So what we should preserve depends on what we like, and we are back where we started." This is not correct. It is true that if our ignorance of the object, or our lack of pleasure in it, were an immutable feature of the universe, then we would have no reason to preserve the object in question. But we are capable of learning about the object; and I believe we are capable of learning to take pleasure in knowledge of any natural object. If that is so, then we have reason to preserve any natural object, just as I said. With regard to objects we already know about and take pleasure in, it is enough to preserve them. With regard to objects we do not know or take pleasure in, we have reason to preserve them, and to study them, and to learn to enjoy our knowledge of them. (Even as to objects we already know something about and enjoy knowing about, there is probably always more we might know. If, as I assume, fuller knowledge makes a more valuable complex, then we have reason to study these objects as well.)

Observe what my argument, if we can accept it, accomplishes. It gives us a noninstrumental argument for the preservation of natural objects, without denying the intuition that the existence of value depends somehow on consciousness. Both of these points bear spelling out.

#### IV. ON NONINSTRUMENTALITY

The main thing I mean when I say the present argument is "noninstrumental" is this: On the present argument it is not the case that we have reason to preserve a natural object only if it is economically useful or if we happen to like it. We have reason to preserve every natural object; those we do not currently have knowledge of or take pleasure in, we ought to learn about and learn to take pleasure in. It is true that our having reason to preserve every natural object depends on the fact that

we have at least the potential for knowing about and taking pleasure in it. But that is a potential we have and which, on the present argument, we ought to develop. The argument for preservation does not disappear just because we decide to ignore that potential. Nor is it necessarily overridden if it turns out that we could satisfy more of our preferences overall by ignoring that potential. Satisfying our preferences is not all that morality is about. The central objection to traditional instrumental arguments for preservation is that they make the case for preservation depend on accidental or arbitrary facts about our needs and preferences. The present argument depends on only one deep fact about us, which, while it could be otherwise, seems too fundamental to be regarded as accidental or arbitrary. The fact that we are able to take pleasure in the knowledge of any natural object is not at all similar to the fact that most of us like butterflies and do not like slugs.

The present argument is also noninstrumental in the sense that it does not make preservation a means to maximizing "the good for man." The good to be maximized is one in which human beings figure essentially (assuming we are the only sufficiently sophisticated consciousnesses in the universe). The good complexes I have described cannot exist without certain facts being true of certain humans. But these complexes are not good because they are "good for" the humans involved.

It might seem that my argument is instrumental in the sense that the existence of any natural object is valuable only because it is necessary to something else, namely, the existence of various complexes of the sort I have described. This suggestion rests on a confusion about the nature of instrumental value. It is true that the existence of a natural object is valuable only as part of one of my complexes. But that is not to say that its value is merely instrumental. Its value does not lie in its consequences; it is not valuable because it causes something else. The complex which is valuable is different from the object alone; but the object is an essential part of it. The relationship between the object and what is valuable in itself is a logical relationship, and not a merely causal one. (I should perhaps point out that the object may have instrumental value, even with respect to a complex in which it figures. The object must exist before it can be known. Its existence at one time may have as a causal consequence its existing and being known at a later time. So its existence at the earlier time may be instrumental to the existence of the valuable complex at the later time. It remains true that the value of the object is not *merely* instrumental, since the object figures essentially in the valuable complex realized at the later time.)



## V. ON VALUE AND CONSCIOUSNESS

I have spelled out the point that my argument for preservation is not instrumental. Let me say a word about the point that it is consistent with our intuition about the relation between value and consciousness. Someone who says that the existence of value depends on consciousness may mean two quite different things. He may mean, "No proposition about value is true except in virtue of being believed by some conscious being." Alternatively, he may mean, "Nothing has positive or negative value unless it somehow involves consciousness." The first claim is metaethical: it is about truth-conditions for moral claims, and it entails subjectivism of some sort. The second claim is normative: it is about what sort of thing in fact has value, and it is consistent with objectivism. The simplest way to see the difference between these claims may be to imagine a universe devoid of consciousness. The proponent of the first claim might well say about that universe that it has "no value" in the sense that no attribution to it of any particular degree of value is true. Because the universe is devoid of consciousness, the question of its value simply cannot arise. (The proponent of the first claim need not say this, but it is something he could say.) The proponent of the second claim, in contrast, would say that the universe without consciousness has a quite definite value, namely zero.

The claim I am presently interested in is the second, normative, claim. It is the second claim that, in the opening paragraphs of this essay, seemed to stand in the way of explaining our duties of preservation by noninstrumental arguments. But it is clear that my Moorean argument for preservation is perfectly consistent with the intuition that nothing has value unless it somehow involves consciousness. The only things that I have asserted are valuable *do* involve consciousness. The consistency of my view with the claim that value requires consciousness is obvious, once we are clear about what version of that claim creates the difficulty.

## VI. OBJECTIONS AND COMPLICATIONS

I have said that a natural object such as the Grand Canyon is not valuable in itself, but that it is good for the Canyon to exist and for us to know about it and take pleasure in our knowledge. Someone might object that this position is incoherent. How can it possibly be a good thing for us to know about the Canyon and take pleasure in it unless the Canyon is worth knowing about and taking pleasure in? In short, does not my view, that a certain sort of complex involving the Canyon is good, presuppose that the Canyon is good in itself?<sup>7</sup>

I concede that on my view the Canyon must be, in some sense, "worth" knowing about and taking pleasure in. It does not follow, however, that the Canyon must be valuable in itself. Rather, to say the Canyon is worth knowing about is to say precisely that complexes involving the Canyon and someone's knowledge of it and pleasure in it are good. To say this is to assert something about the Canyon which is not tautological or trivial. As I have already pointed out, there are things (such as "Smith's cruelty") which do not generate good complexes when someone knows about them and takes pleasure in them. So, the claim that the Canyon is worth knowing about is a significant claim even though it does not entail that the Canyon is valuable in itself.<sup>8</sup>

The hypothetical objector may not be satisfied. How do I know that the complex involving the Grand Canyon is good and the analogous complex involving Smith's cruelty is bad? Must not there be something about the Grand Canyon (itself) and Smith's cruelty (itself) that accounts for this difference? What could it be except that the Canyon is good in itself and Smith's cruelty is bad in itself? A complete answer to this question would take us far beyond the present essay. The short answer is this. There is a difference between the Canyon and Smith's cruelty, and it is a difference in intrinsic value. But the difference is that while Smith's cruelty is bad in itself, the Canyon has zero value in itself. (Note that Smith's cruelty can be bad in itself without violating the principle that value requires consciousness, since Smith's cruelty is itself a feature of a certain consciousness.) As to things, like Smith's cruelty, that are good or bad in themselves, it is good to know them and take pleasure in them if they are good, bad to know them and take pleasure in them if they are bad. (It is not the knowledge but the *taking pleasure* that makes the complex bad when the thing is bad in itself.) As to things, like the Canyon, that are neither good nor bad in themselves, knowing them and taking pleasure in them is good. There is an asymmetry in this position. But that, so far as I can now make out, is the way it is.

A different objection to my claim that the Grand Canyon has no value on its own depends on the well-known "last person" argument.<sup>9</sup> Suppose Jones is the last person on earth. She knows there will be no one after her. As she dies, she can push a button which detonates a cataclysmic explosion and destroys the Grand Canyon. Would it be wrong for her to push the button? Many people are inclined to think it would be wrong; and they also think that the wrongness of pushing the button can only be accounted for by granting the Canyon value in itself. After all (the argument goes), once Jones is dead, the universe is empty of consciousness. If consciousness is essential to value, then there is zero value, whether the Canyon is still there or not. If it makes no difference to the

value of the universe whether the Canyon exists after Jones dies, she can hardly do wrong by destroying it in the moment of her death.

My own view is that it would be wrong for Jones to destroy the Canyon, but that we can account for this consistently with my theory. There are two different points to be made, both of them important. First, assuming Jones destroys the Canyon, why does she do it? We could describe a variety of possible motivations, which differ subtly, but there must be a common element of sheer wanton destructiveness. Jones wants the Canyon not to exist. But that desire is inconsistent with Jones's knowing of the existence of the Canyon and taking pleasure in it. If Jones has the proper attitude toward the Canyon (that is, the attitude which would figure in a valuable complex involving the Canyon and herself), she will not destroy the Canyon. Conversely, if she does destroy the Canyon, she has the wrong attitude, and that is what is wrong in the situation. It is true that on this analysis her act of destruction is wrong only derivatively. The act is wrong because it manifests a wrong attitude, while the attitude would be wrong whether the act were done or not. Still, it is the act that manifests the attitude to us, so it is natural that we should locate the wrongness in the act, at least on first consideration. (Someone might ask us to imagine that Jones does take pleasure in the existence of the Canyon, so long as she exists, but that she is saddened by the thought of the Canyon surviving her. She wants to affirm her intimacy with it by "taking it with her." I do not find this psychologically plausible. If it were plausible, then perhaps we should say that Jones was extremely peculiar, but in such a way as to make her apparently wrong act arguably innocent.)

My second point about the "last person" argument avoids any psychological claims, but raises other complications. The argument that it does not matter whether the Canyon exists after Jones's death assumes that the Canyon's existence can only be valuable as part of a complex involving contemporaneous knowledge by some consciousness. Is it not possible, however, that the value of the universe could be increased by the Canyon's existence after Jones's death, combined with Jones's knowledge (before her death) that the Canyon will continue to exist and her pleasure in that knowledge? When I first described the sort of complex we have been discussing, I ignored this matter of timing, and I must admit that it raises many questions I find perplexing. But we plainly cannot insist on contemporaneous consciousness in every case. Consider human knowledge of dinosaurs. No dinosaur was ever known by a contemporary human consciousness, but it is good that dinosaurs should have existed and that humans now should know about them and take pleasure in that knowledge. If there is good to be achieved by knowledge of what came before the first human, why not also by knowledge of what comes after

the last one? But if there is good to be achieved by knowledge of what comes after the last human, then Jones, in destroying the Grand Canyon, destroys an opportunity for good.<sup>10</sup>

Now we have a new problem. I have said that our knowledge of dinosaurs is valuable even though dinosaurs no longer exist. That might seem to affect the nature of our obligation to preserve species that do exist. Imagine that there is some species about which we know everything there is to know. Is there really any reason to preserve that species? We will not learn more about it if it continues to exist. If it ceases to exist, we can remember it. We can continue to know "how it was" and to take pleasure in our knowledge. What difference does it make whether the species is still around?

Although I think it is not a matter of indifference whether the species continues to exist, I should admit that in one respect the case for preservation is *weakened* by our complete knowledge of the species. If we find ourselves in circumstances where we must choose between two similar species—where both are endangered but only one can be saved—we have reason to save the species about which we know *less* in order that, after study, we may eventually end up with the greatest aggregate knowledge of the two species.

Going back to the case where there is just one species which we know completely, why is it desirable that that species continue to exist? One point, of course, is that its continued existence may be important instrumentally to our continuing knowledge of its past existence and pleasure in that knowledge. This argument disappears, however, if we assume that our memory simply will not fade. Another tempting suggestion is this: The species cannot be completely known if it ceases to exist, since if it continues to exist it will evolve and will have a future development that we cannot predict. Therefore the question why it is good for a completely known species to continue to exist cannot properly arise. This may be the right answer, but it raises complications. What are the criteria for identity of a species over time? If the species evolves, is it the same species? If it gives rise to a different species, then the consequence of continuing its existence past the present is not that it will continue to exist and be known by us, but that something new will come into existence which we can know. Our knowing that new thing would, on my view, be a source of value; but if the present species ceases to exist for some reason other than self-annihilation by evolution, then presumably *different* new things will come into existence for us to know. It is not immediately obvious which possible set of new things would, if known, generate complexes of greater intrinsic value.

For the present, I am inclined to rest simply on an intuition that it is

better, other things being equal, for something to exist and be known than for it not to exist and (though nonexistent) be known. Many philosophers have had the intuition, in one form or another, that existence is good. I have rejected the claim that the mere existence of entities without consciousness is a good. But that rejection is perfectly consistent with the suggestion, which I would expect to be widely accepted and which reflects the intuition that existence is better than nonexistence, that existing-and-being-known is better than non-existing-and-(nonetheless)-being-known.

We should also remember that the question "What difference does it make whether the perfectly known species continues to exist?" will arise in some context. Insofar as we are called upon to make a choice, our choice can be expected to manifest our attitude toward the species, just as Jones's choice about the Grand Canyon manifested her attitude. If we now take pleasure in our knowledge of the species, we will not be able to regard it as a matter of indifference whether the species continues to exist. We may decline to save it, or we may even eliminate it, for adequate cause. But we will not let it go or eliminate it for no reason at all.

## VII. SOME APPLICATIONS

So far I have been engaged in general exposition of my theory. It may clarify how the theory works if we look at some examples.

(1) Consider a case where we must choose between protecting two individuals of some common species and protecting the last two (mating) individuals of a similar but rare species. Most of us would think it better to protect the rare individuals. Theories based on the "rights" or "interests" of individual living creatures cannot account for this intuition.<sup>11</sup> My theory, however, accounts for it very simply. Whichever pair of individuals we protect, we save two individuals (whose existence we know of and take pleasure in). That is good. But if we protect the rare individuals, and only if we protect them, we also save a species which would otherwise disappear. Because the species is a separate "natural object," saving the species is a separate good. What I have just said may seem too simple to be an argument. I have hardly done more than restate the obvious basis for our intuition that we should save the rare individuals. The point is that my theory, on which every natural object is potentially valuable, and valuable in essentially the same way though not necessarily to the same degree, provides a natural home for our intuition. Competing theories do not.

(2) Consider a case where we must decide whether or not to prevent the extinction of a species which seems to be disappearing in the natural

course of events and not because of human intervention. Even people who feel strongly that we should not cause extinctions are likely to feel that allowing an extinction to occur (not preventing it when prevention is in our power) is quite a different thing. This obviously cannot be explained by a theory which assigns value only to species as such. On my view, the difference between causing an extinction and allowing an extinction is explained by the fact that natural processes are potentially valuable natural objects just as species are. Where we cause an extinction, we are destroying both the species and its natural "trajectory." If we prevent an extinction, we are saving a species (which is good), but we are interfering with a natural process. It does not follow from this that we should always allow extinctions. There is a choice to be made. But when the issue is whether to allow an extinction, as opposed to whether to cause an extinction, there are considerations on both sides.

(3) A similar question is whether we should interfere in a particular case to save an animal about to be eaten by a predator. On any theory which confines its attention to individuals, it is hard to see why we may not choose either way. The same is true even on a theory that values species, if the choice we are considering arises in only a small number of cases. However, many people would think that, barring special circumstances, we probably should not intervene. This again is easily explained if we grant value (by which I always mean potential value as part of an appropriate complex) to the natural processes of predator-prey interaction.

(4) A rather different question is whether we should preserve things which are dangerous, such as the smallpox virus or rats, or things which are generally thought ugly, like banana slugs. My theory says that we have reason to preserve the smallpox virus and that the reason is of the same type as the reason for preserving, say, butterflies. But if the consequential costs of preserving the smallpox virus are too great, then on balance we should extinguish it. Calculating the consequences and striking the balance may be very complicated. But the fact that the smallpox virus is dangerous to people does not mean it is not worth knowing about or that we may not take pleasure in knowing about it. No more does the "sliminess" of the slug make it unworthy. "All God's creatures" are worth our attention.

(5) Sometimes we have to destroy something, like a laboratory animal or the natural operation of some natural process over a particular stretch of time, in order to increase our knowledge of the thing we destroy or of similar things. On my view, this destruction may be justified. The value of our knowledge of and pleasure in anything is increased if the knowl-



edge increases. In some cases, then, the destruction, which should always be cause for regret, will produce adequate compensating benefits.

(6) There has been discussion of whether we should focus our efforts at preservation on rare species or on rare ecosystems.<sup>12</sup> There is even the suggestion that protecting species and protecting ecosystems will come to the same thing in practice. Although I agree with much of what is said about this, I would point out that there is a difference in principle between protecting species and protecting ecosystems. We can easily imagine an ecosystem which contains only common species (and only species common outside that ecosystem) but which is nonetheless special as an ecosystem because the species interact there in unique ways. Similarly, we can imagine a species which is rare, and which inhabits only one ecosystem, but which does not make the ecosystem as such specially interesting because a similar ecological role is played by a similar but more common species in many similar ecosystems. Given that there is a difference between protecting rare species and rare ecosystems, my theory says that we should protect both. I think that comports with most people's intuitions.

(7) Finally, what is the value of human-created species? This is an unusual question, but a very interesting one. It seems to me that human-created species must be regarded as human artifacts. Many human artifacts are valuable in the same general way as natural objects; but they are not valuable in exactly the same way. To explain why not, I must add to my theory a point that has not been brought out previously. I have not attempted to characterize in full detail the emotion I have referred to as our pleasure in the knowledge of various natural objects. One aspect of that emotion ought to be pleasure in the knowledge of them as natural, as things not of our making. Our relation to the natural world is complex. We are rooted in it. We evolved out of it. But also, in some sense, we have evolved *out* of it. Unless we are in some deep way different from earthquakes, oak trees, and lemurs, moral philosophy, and indeed all philosophy and all science, is an illusion. I do not claim to understand just how we are different from earthquakes, oak trees, and lemurs; but if there is such a gulf as I claim between the human world and the natural world, that is itself a fact (or an enormous system of facts) worth learning about and taking pleasure in. It follows, I think, that we should value what is natural in part for being natural. And so, of course, we should value what is human in part for being human. Everything made by humans (or at least every material thing made by humans) has a natural component; and the proportions and mode of mixing of the natural and the "human" may vary greatly. I do not mean to suggest that a "wild" garden and a freeway interchange are to be

valued in exactly the same way because they both show the human hand. But the distinction between what is and what is not our creation would be crucial to a complete explication (which I cannot here provide) of how we should enjoy the world around us.<sup>13</sup>

## VIII. PRIORITIES AMONG SPECIES

I turn now from specific cases to some general remarks on the problem of priorities among species. These remarks will also tend to fill out my theory. The question is this: If we can preserve only a limited number of endangered species, and if we have some choice about which to preserve, how should we decide? Specifically, what makes one species intrinsically more valuable than another? The second question, about intrinsic value, is narrower than the first question, about how we should decide. I shall focus on the second question, but I should point out what I am ignoring, which is questions about the instrumental value and disvalue of species.<sup>14</sup> Species often have substantial instrumental value or disvalue. It is likely that in many cases where we must decide what to preserve, the instrumental considerations completely swamp considerations relating to the intrinsic value of the species themselves. Of course, in principle, we cannot know what the instrumental considerations are without having a complete theory of intrinsic value. But a complete theory would recognize many forms of intrinsic value not discussed in this essay. So, in discussing only the intrinsic value of species, I am dealing with only a part, perhaps a very small part, of the problem.<sup>15</sup>

It seems that there are two clear general principles. First, more complex life forms are more valuable than less complex ones, other things being equal. A ferret is more valuable than a centipede, which is more valuable than an amoeba. Even an amoeba is enormously complex. Still, there are degrees of complexity; and that remains true even if I am wrong about my specific rankings. Given that there are degrees of complexity, the more complex object is more valuable just because it provides the opportunity for more knowledge. There is more to be known about a complex object than about a simple one. (To be sure, the possibility of the thing being "known" at all depends on its having a certain stable internal organization. Complexity is not the same as chaos, and there is a sense in which organization is simplicity. But these facts do not seem to upset our intuitions about the value of complexity and the reason it is valuable.)

In the preceding paragraph I compared "a ferret" with "a centipede," and so on. The original question concerned the value of a species of ferret or a species of centipede. Does the value ranking remain the same whether

we talk about individuals or species? In general, yes. There may be some exceptions, however. Social insects, for example, exhibit complexities of behavior as species that would be unknown to us and possibly undiscoverable if we knew these insects only as individuals. So in this case the species is relatively more valuable than we might think after considering only the (apparent) complexity of individuals. Similarly, certain species may play special roles in complex and unusual ecosystems, which makes a complete knowledge of them and their systematic role more valuable than it would otherwise seem.

The second clear general principle is that, other things being equal, a species is made more valuable by belonging to a sparsely populated genus or family or order. Taxonomically isolated species are likely to represent unusual modes of adaptation. Their existence increases the diversity of nature. That means both that there is more to know about what exists, and that a complete knowledge of what exists entails a greater knowledge of nature's possibilities.

Needless to say, the values of complexity and diversity may conflict. We might be compelled to choose between a complex species in a richly populated genus and a simpler species which has no congeners at all.

A question that I shall raise without answering is whether a species acquires special value by having a role in some human culture. Animals figure in our cultural practices in a variety of ways. The bald eagle is the national symbol of the United States. Certain Eskimo tribes depend heavily on the bowhead whale. English-speaking children (and many adults who were once English-speaking children) may have special feelings about rabbits and deer because they were brought up with Peter Rabbit and Bambi. And so on. Clearly any of these facts may invest a species with special instrumental importance. The question is, do any of these facts invest the species with special intrinsic importance? Or rather, since we deny intrinsic importance to the species itself, do any of the cultural complexes we have indicated have an intrinsic value that is not exhausted by the value of the "natural object plus knowledge plus pleasure in the knowledge" and in which the species figures essentially? It should be apparent why, having raised this question, I cannot answer it here. An answer would presuppose a complete theory of the intrinsic value of cultural manifestations. We would also need to say more than we have said about the special value (if any) of shared knowledge, as opposed to knowledge belonging (or considered as belonging) to individual knowers only. I suspect that in the end we would conclude that the intrinsic value of a species is increased by its playing a special role in human culture. But for now that must remain a conjecture.

## IX. THE IMPORTANCE OF BEING HUMAN

For much of this paper I have written as if the valuable complexes under discussion must involve, in addition to some natural object, a human being who knows the object and takes pleasure in it. Is this concentration on human knowers justified? As I have already explained, it is not my intention to limit the relevant range of knowers by stipulation. In principle, other knowing subjects could fill the role of the human being in the complexes I regard as valuable. It just seems to me that in the universe as we know it, there are no other subjects who can fill the same role.

Why not? Obviously, there is both a normative and an empirical premise. The normative premise specifies just what kind of knowledge and pleasure—just what sort of consciousness—is necessary to the goodness of one of my complexes. The empirical premise is that there are no other subjects in the universe who possess the relevant sort of consciousness.

I have said the subject whose participation makes a valuable complex must know some natural object and take pleasure in it. We cannot deny that certain creatures besides ourselves have "knowledge" of some sort and experience "pleasure" of some sort. But knowledge and pleasure come in many varieties. Although I cannot define precisely the features of consciousness that go to make a valuable complex, I can make it clear that the consciousness must be relatively sophisticated.

First, the knowing subject must be self-conscious. He (let me call the indefinite and possibly nonhuman subject "he") must be aware of himself as something separate from the object of his knowledge. Why is this important? Because the subject must take pleasure in the object and in his knowledge of the object. The subject who does not distinguish between himself and the object may feel pleasure as a result of his awareness of the object, but it seems that he can hardly take pleasure in the object (as such). Even more clearly, unless he is aware of himself as a knowing subject, he is not aware that he has knowledge, and so he cannot take pleasure in his knowledge.

A related point is that the subject must be able to contemplate the possibility of the nonexistence of the things he takes pleasure in. To take pleasure *in* something, as opposed to merely getting pleasure from something, requires that one consciously prefer the existence of what one takes pleasure in to its nonexistence, and therefore requires that one be able to contemplate its nonexistence.

If the full range of possible goods from knowledge of and pleasure in natural objects is to be achieved, the knowing subject must be capable of wide-ranging intellectual apprehension. For example, if the full range of possible goods is to be achieved, the subject must be able to appreciate

modern physics. This obviously requires an intellectual capacity considerably in excess of day-to-day needs. It also requires the ability to engage in complicated symbolic activity.

Finally, I am inclined to think that the knowing subject must at least be able to raise the question of what is intrinsically good. Whether this is a further required feature of the relevant consciousness or whether ability to raise value questions is entailed by the other features I have mentioned and briefly argued for (self-consciousness, ability to contemplate nonexistence, wide-ranging intellectual apprehension and symbolic capacity) is itself an interesting problem. Whatever the answer to that problem, however, the reference to ability to raise value questions suggests a useful way of characterizing the required features as a group. Even if the first four features are not sufficient to guarantee the ability to raise value questions, they seem necessary to that ability. In a sense, then, the whole package adds up to the ability to raise value questions. This seems eminently reasonable. Remember that what got us started on this search was a feeling that the existence of value somehow depends on consciousness. If that is so—if we are trying to define the sort of consciousness which is essential to the existence of value—then it seems fitting that the relevant consciousness should turn out to be one that can appreciate value questions.

As to the empirical question whether humans are the only subjects in the universe who have the relevant sort of consciousness, I do not claim to know for certain. No one can afford to be too confident today that he knows all there is to know about the intellectual life of chimpanzees or porpoises. I would claim that, on our planet, human beings are currently far beyond any other creatures in the development of the relevant features and capacities. I would also claim that at most only a very few of our fellow creatures are capable of developing intellectual lives at all resembling ours. In sum, I think we have good empirical grounds for regarding ourselves as special.

I do not understand any of the features of consciousness I have pointed to well enough to know whether they should be regarded as occurring in all degrees of development or whether they are intrinsically "lumpy." That is, is it possible for a conscious creature to be just the slightest bit self-conscious, or is self-consciousness an all-or-nothing matter? It seems implausible to regard self-consciousness as strictly an all-or-nothing matter, but there may still be some initial threshold of development below which there can be no self-consciousness at all. In any event, to the extent that the features of consciousness I have pointed to do come in degrees, I would concede that different degrees of valuable consciousness may all produce valuable complexes with, of course, different degrees of value.

So there *may* be some intrinsic value in the intellectual life of a dog. It does not follow, however, that the dog in whose life there is some intrinsic value is as valuable as, or has the same "rights" as, a fully developed human being. Because there is more good to be achieved by "cultivating" the human, the human's needs and interests will tend to prevail.

So much for my argument about why, and to what extent, humans are special. Many environmentalists seem to think that claiming to be special can show only that we are arrogant or presumptuous. Paul Taylor has recently attempted to show that humans should not be regarded as special.<sup>16</sup> Taylor's argument is aimed specifically against the claim that we are special because we are "rational." That is not exactly my claim, but it is close enough to make what he says of interest here. His argument goes as follows: We cannot say humans are special just because they are more rational than other animals. After all, cheetahs are faster than other animals, and eagles see better. If humans are best at one thing, other species are best at other things. Nor can we say that being rational is better or more important than being fast or far-sighted. Being rational has been adaptive for humans and is valued by humans. But cheetahs and eagles have taken other routes and value other qualities.

This does not seem to be an argument at all against a position like mine. It may be a useful reminder that we cannot say simply, "Rationality is good because that's what we're good at," or "Rationality is valuable because that's what we value." But it says nothing against the possibility that there is some objective point of view from which rationality does actually have an importance which speed and acute vision do not.

Indeed, Taylor himself seems committed to the existence of such an objective point of view. He is one of those who believe that every creature has a good of its own. He instructs us that we should respect the goods of other creatures. But why? If the speed of the cheetah is good only from the cheetah's point of view, as Taylor suggests rationality is good only from our human-centered point of view, then why should we respect it at all? The cheetah's point of view is not ours. In telling us to respect the goods of other species, Taylor implicitly assumes both that there is a viewpoint "above" all the particular species-centered views and that we can adopt that viewpoint. If this synoptic viewpoint exists and is accessible to us, why should we not find when we adopt it that our capacities have just the special importance I claim?

My own view, of course, is that there is a synoptic viewpoint, and that it is accessible to us, and that when we adopt it we see not only that humans are specially important, but also why. What we see is that humans are necessary to the full realization of the "goods" of other species. The cheetah's speed is good, but it is not good in itself. It needs to be known

by a subject who can know it and take pleasure in it in a sophisticated way. The cheetah does not value his speed in the required way. We can and should. This is the proper spelling out of the notion that every creature has "a good of its own."

One of the most striking articulations of the claim that humans are special comes from none other than Aldo Leopold, who is often thought of as concerned only to deflate human pretensions and put us in our place. In an essay inspired by a monument to the passenger pigeon, Leopold writes:

For one species to mourn the death of another is a new thing under the sun. The Cro-Magnon who slew the last mammoth thought only of steaks. The sportsman who shot the last pigeon thought only of his prowess. The sailor who clubbed the last auk thought of nothing at all. But we, who have lost our pigeons, mourn the loss. Had the funeral been ours, the pigeons would hardly have mourned us. In this fact, rather than in Mr. DuPont's nylons or Mr. Vannevar Bush's bombs, lies objective evidence of our superiority over the beasts.<sup>17</sup>

#### X. ON NOT AVOIDING THE PROBLEM, AGAIN

I am now done with expounding my solution to the problem posed at the beginning of this essay. The solution, depending as it does on a Moorean view of the good, may seem implausible. Would it be better after all just to deny that we have noninstrumental duties of preservation?

Many philosophers who write about our relationship to nature observe that we have intuitions suggesting noninstrumental duties of preservation and conclude immediately that some theoretical underpinning for such duties must be found. That is not my position. One function of moral theory is to account for our intuitions; but another function is to test them. If we had a moral theory that was satisfactory, or even reasonably satisfactory, in other respects, but that failed to account for our supposed duties of preservation, then we would have strong reason for denying those duties.

In truth, however, we have no theory which is even remotely satisfactory in other respects. There was a time when philosophers treated as the central question of ethics the question, "What ought I to do with my life?" I think this is still the central question. But it is a question which neither the modern utilitarian nor the modern Kantian (and every popular theory is either a utilitarianism or a Kantianism) even attempts to answer.

The modern utilitarian takes as the good the satisfaction of people's preferences, whatever they may be. But this theory of the good does not

specify adequately what we should aim at in life, for the simple reason that human preferences are not given exogenously. Any individual can to some extent control the content of her own preferences. She cannot revise them instantaneously by an act of will, but she can act in ways which, over time, will create or strengthen some preferences and extinguish or weaken others. Even more obviously, the general run of human preferences are in large part the result of prior human decisions, by families, societies, and politics; and present decisions by families, societies, and politics affect what people's preferences will be in the future. We are therefore inevitably confronted with the question of what our preferences ought to be. What ought we to try to bring about that we and others prefer? Aside from some observations about the desirability of preferences being, so far as possible, well informed and consistent, modern utilitarians have nothing to say about this. They cannot have anything to say about this without going beyond the claim that the good is the satisfaction of preferences. (Benthamite utilitarianism, with its claim that the good is a single, homogeneous stuff called "pleasure," is not subject to the same criticism. But there are other reasons why Benthamite utilitarianism is implausible. One cannot believe after reading the *Gorgias* and the *Philebus* that pleasure is the good; and one cannot believe after reading the *Nicomachean Ethics* that pleasure is homogeneous.)

The modern Kantian—and I use the term broadly, to include libertarians as well as liberals—is in no better state. His essential program is to carve out for each agent a sphere of autonomy. This may be done (as the libertarian does it) by purely negative constraints on how individuals may be treated; or it may involve (as it does for most liberals) positive prescriptions concerning such things as the distribution of resources. In either case, nothing is said about what anyone ought to do with the autonomy that has been secured for him.

If modern moral theory ignores the central question of morality—"What ought I to do with my life?"—then we need a new moral theory, or at least a different theory from the currently popular utilitarianisms and Kantianisms, for reasons which go far beyond the desire to justify preservationist intuitions on philosophical grounds. It seems to me that some theory of the good along the general lines of G. E. Moore's account will be necessary to answer the question of what one ought to do with one's life. It is a happy accident that such an account also allows us to explain duties of preservation which are otherwise inexplicable. (It isn't really an accident, of course. Any proper answer to the question of what one ought to do with one's life will have to address the general problem of man's place in the universe.)



## XI. CONCLUDING REMARKS

This has been a long essay, a forest in which we have become preoccupied with a number of individual trees. I have two concluding remarks.

The first remark is by way of summary and emphasis. The main thing I set out to do was to construct a theory with two features. On the one hand, the theory should generate categorical duties of preservation—duties that do not depend on instrumental arguments, and, more particularly, duties that are independent of our changeable needs and preferences. On the other hand, the theory should be consistent with our belief that the existence of value depends on consciousness; the theory should avoid ascribing intrinsic value to natural objects indiscriminately. I have constructed such a theory. Whether I have made it plausible, or as plausible as the alternatives, the reader must judge.

The second remark is not central to the present essay, but it is important to a correct general understanding of our duties regarding nature. If my theory is right, human beings occupy a special role in the universe. We are essential to the realization of the most significant values, even those involving nonhuman nature. What that means is that all the standard instrumental arguments for preservation, if they are sufficiently general, retain their full force on my view. "Sufficiently general" instrumental arguments are those based on what is essential to human life and general well-being, as opposed to what is necessary to satisfy particular, possibly valueless, preferences. Thus, although I have been concerned to construct a noninstrumental argument for certain conclusions, I have definitely not attempted to displace instrumental arguments across the board. It may well be that the most important arguments in practice are still instrumental. That also accords with common intuitions.

## NOTES

1. Cf. William Frankena, "Ethics and the Environment," and Peter Singer, "Not for Humans Only: The Place of Nonhumans in Environmental Issues," both in *Ethics and Problems of the 21st Century*, edited by K. E. Goodpaster and K. M. Sayre (Notre Dame: University of Notre Dame Press, 1979), pp. 3-20, 191-206; Henry Sidgwick, *Methods of Ethics*, bk. I, chap. 9, sec. 4 (New York: Dover Publications, 1966).
2. Before going on, let me put aside a possible distraction, the issue of animal pain. Almost everyone now agrees that we have at least one nature-regarding duty which is not to be explained in terms of human needs or preferences. I refer to the duty not to cause pain to other sentient creatures. The recognition of this duty does not solve, or even suggest a solution to, our larger problem. The duty not to cause pain does not begin to encompass all the

nature-regarding duties we seem to have. On the other hand, we can recognize a duty not to cause pain without seriously undermining the general notion that value depends on consciousness. In short, we can recognize a duty not to cause pain without thereby either accounting for our supposed duties of preservation or eliminating the apparent obstacle to accounting for them. A completely adequate account of why we should not cause pain would shed some light on the nature of the connection between value and consciousness; but we do not have a completely adequate account of why we should not cause pain. We do not have an adequate account of what pain is. In the present state of affairs, recognizing a duty not to cause pain leaves the problem of duties of preservation untouched. In what follows I shall ignore the duty not to cause pain, without meaning to deny it; and I shall not worry about how it fits in with the broader theory I shall describe. For a further discussion of these issues, see Elliott Sober, this volume.

3. Judith Jarvis Thomson, *Self-Defense and Rights* (Lindley Lecture) (Lawrence: University of Kansas, 1977).
4. For example, Paul Taylor, "The Ethics of Respect for Nature," *Environmental Ethics* 3 (1981): 197-218. Similar claims are that all living creatures have "interests," Kenneth Goodpaster, "On Moral Considerability," *Journal of Philosophy* 75 (1978): 308-25, or that every living creature possesses a "will," Albert Schweitzer, *Civilization and Ethics* (Part II of *The Philosophy of Civilization*), trans. C. T. Campion (London: A. & C. Black, 1929), pp. 246-47, quoted in Peter Singer, *Practical Ethics* (Cambridge: Cambridge University Press, 1979), p. 91.
5. Baird Callicott, this volume.
6. For Moore's treatment, see *Principia Ethica*, chap. VI (Cambridge: Cambridge University Press, 1903). The reader who knows his Moore may be thinking that Moore would admit some value in the Canyon all by itself. That is true, and it is a point I shall return to later on. Whatever Moore would have thought about the value of the Canyon by itself, it is certain that he regarded "organic unities" of the sort I have described as having a value which was not merely the sum of the values of their parts. It is equally certain that Moore thought these unities contributed much more to the overall value of the universe than did objects like the Canyon on its own (*Principia Ethica*, chap. III, sec. 50). In any event, I am not primarily interested in exegesis of Moore. Although I have taken a fundamental idea from him, and although I am indebted to him at many points, I shall develop his idea in my own way and for my own purposes, without attempting to specify where I am following him and where I am not.
7. Cf. Holmes Rolston III, "Values in Nature," *Environmental Ethics* 3 (1981): 113-28; Tom Regan, "The Nature and Possibility of an Environmental Ethic," *Environmental Ethics* 3 (1981): 19-34.
8. My suggestion concerning what it means to say the Canyon is worth knowing about parallels Moore's definition of the beautiful as "that of which the



- admiring contemplation is good in itself." *Principia Ethica*, chap. VI, sec. 121.
9. Richard Routley, "Is There a Need for a New, an Environmental, Ethic?" *Proceedings of the XVth World Congress of Philosophy* 1 (1973): 203-209.
  10. The points in the text about the last person argument can be reformulated in such a way as to undermine Moore's argument (against Sidgwick) for the proposition that inanimate objects may have intrinsic value, at least insofar as Moore suggests an argument and does not merely rely on his intuitions. See *Principia Ethica*, chap. III, sec. 50. Moore may have gone over to Sidgwick's side on this issue by the time he wrote *Ethics* (London: Oxford University Press, 1912), p. 153.
  11. Cf. Elliott Sober, this volume.
  12. Cf. Terry Leitzell, this volume.
  13. Cf. Kenneth Simonsen, "The Value of Wildness," *Environmental Ethics* 3 (1981): 259-63; Aldo Leopold, "Goose Music," in *A Sand County Almanac: With Essays on Conservation from Round River* (New York: Ballantine Books, 1970), pp. 226-33.
  14. Perhaps I should also point out that I am not backing off from the claim that species have intrinsic value only within certain complexes. Strictly speaking, the question I shall discuss concerns the comparative intrinsic value of complexes involving different species. It is much more convenient, however, to speak of the intrinsic value of species, and for the course of the discussion of priorities I shall do so.
  15. I am also ignoring the sort of question that Slobodkin discusses in his very interesting essay. His concern, roughly, is how we should expend scarce resources to identify endangered species. Given our considerable ignorance about which species are in danger, this question may be much more important in practice than mine. See Slobodkin, this volume.
  16. Paul Taylor, "The Ethics of Respect for Nature," *Environmental Ethics* 3 (1981): 197-218.
  17. "On a Monument to the Pigeon," in *A Sand County Almanac*, p. 117.

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## PART III

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### Management Considerations