INVITED ESSAY

A Critical Overview of Environmental Ethics

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This paper provides both a general introduction to, and a detailed critical overview of, the emerging field of environmental ethics. The first part briefly sets the intellectual historical context for the emergence of this important new field of inquiry. The second part outlines the three main human-centered, *anthropocentric*, or *instrumental value* approaches to environmental ethics (the *unrestrained exploitation and expansionism approach*, the *resource conservation and development approach*, and the *resource preservation approach*). The third part outlines the religious and secular foundations of these three anthropocentric, instrumental value approaches and shows why these foundations are now considered to be untenable. The fourth and major part of the paper is then devoted to introducing the three main *nonanthropocentric* or *instrinsic value* approaches to environmental ethics (the *sentience*—or *animal liberation*—*approach*, the *life approach*, and the *holistic integrity approach*) and critically examining each of these approaches in terms of both their *rational foundations* and their *practical consequences*.

The general conclusions that follow from this examination of the three main nonanthropocentric, instrinsic value approaches are as follows: first, two of these approaches—the life approach and the holistic integrity approach—are based on flawed rational foundations; second, all three of these approaches suffer from a range of (highly) objectionable practical consequences; and third, none of these approaches is comprehensive enough in scope to deal directly with the full range of environmental problems with which people are concerned on a day-to-day level. In the fifth and concluding part of the paper it is pointed out that while these conclusions are mostly of a negative kind, an understanding of the arguments that have led to them should ultimately serve as a *positive* stimulus to the development of better approaches to environmental ethics.

KEYWORDS: ethics, environment, instrumental value, intrinsic value, anthropocentric, nonanthropocentric.

1. CONTEXT

If you had studied ethics virtually anywhere in the Western world in the roughly two and a half thousand years between the time of the Greek founders of Western philosophy and the early 1970s, it is almost certain that you would have been exclusively concerned with the discussion of issues that were entirely human-centered or, at least, theologically-centered. This is an extraordinary feature of our intellectual history. Expressed another way, it means that for virtually the entire

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duration of Western intellectual history, ethical discussion has not had any direct concern with moral obligations that humans might be thought of as having toward the nonhuman world. The only conceptual resources that this intellectual tradition could offer to questions such as "What's wrong with killing my neighbor's dog (which keeps me awake all night)?," or "What's wrong with chopping down the stand of trees on my neighbor's property (which blocks my view of the river)?," have been of the kind "Because the dog or the trees matter to your neighbor (or perhaps to God—although that itself has been a thoroughly debatable point in Western religious thinking), you have a moral obligation not to harm your neighbor (or sin against God), and to do what you are proposing would be an indirect way of harming your neighbor (or a sin against God)." The very idea that humans might actually be thought of as having *direct* moral obligations toward the *nonhuman* world was simply not on the ethical agenda.[1]

Although there had been, here and there, a few earlier challenges to this ethical mindset, it was not until the late 1960s and early 1970s—in the context of alarming warnings about the rapid development of a humanly caused global environmental crisis—that this situation showed the first signs of changing in any steady sort of way. Work in environmental ethics that dates from this period is, therefore, definitely "early" work in the field (and, as often occurs in the establishment of a new field, some of this work has had a disproportionate influence on the subsequent development of the field). By the end of the 1970s, however, the first professional journal devoted to environmental ethics appeared and it began to be possible—for, to repeat, the first time in Western intellectual history—to speak with some confidence of the existence of a bona fide field of intellectual inquiry that answered to that description.[2]

That said, the birth of this new field of inquiry in the 1970s and its early days in the 1980s have been far from smooth. The human-centered framework of reference has been so strong in our culture generally and in ethical discussion in particular that the acceptance of environmental ethics as a legitimate area of study has been hard won indeed—often at some cost to the reputations and career chances of those who pioneered these developments.[3] Thankfully, however, things have been changing, and, today, in the mid-1990s, environmental ethics seems to be meeting with more and more acceptance as not only a legitimate but also an important—indeed, a fundamentally important—area of inquiry.

In the face of the growing and unrelenting urgency and magnitude of the environmental crisis, it seems that more and more people are coming to recognize that there are good reasons for regarding ethics as playing a substantial and quite possibly a pivotal role in both the aetiology of and the prognosis for the ecological crisis. Thus, as the distinguished ecologist and conservation biologist Edward O. Wilson has said:

> Environmental ethics, still a small and neglected branch of intellectual activity, deserves to become a major branch of the humanities during the next hundred years. In the end, when all the accounting is done, conservation will boil down to a decision of ethics based on empirical knowledge: how we value the natural world in which we evolved and now, increasingly, how we regard our status as individuals.[4]

What conceptual resources, then, can environmental ethics offer? Essentially, these have come in two basic forms: *instrumental value* and *intrinsic value.*

2. INSTRUMENTAL VALUE APPROACHES AND THEIR PROBLEMS

We are quite used to thinking of the world around us in terms of its *use value* or *resource value,* and environmental philosophers refer to this kind of value as *instrumental value* (from the Latin *instrumentum,* tool, equipment). Any approach that views the nonhuman world purely in terms of its instrumental value is, of course, a thoroughly human-centered, or anthropocentric, approach. However, as we will see, that does not necessarily mean that it is a destructive approach or even an exploitative one.

We can distinguish three main kinds of instrumental value approaches: *unrestrained exploitation and expansionism, resource conservation and development,* and *resource preservation.* These approaches articulate a range of instrumental values, as we will also see.

In both the unrestrained exploitation and expansionism approach and the resource conservation and development approach the nonhuman world is considered to be valuable only in so far as it is of instrumental value to humans. Moreover, the particular kind of instrumental value that is emphasized in both cases is the *physical transformation value* of the nonhuman world, that is, the value—typically the economic value—that can be realized by physically transforming the nonhuman world in some way, such as damming, farming, logging, mining, or slaughtering. Where these approaches differ is that the unrestrained exploitation and expansionism approach does not recognize the fundamental fact that there are limits to material growth whereas the resource conservation and development approach does. This crucial difference leads to dramatically different senses of obligation toward future human generations and, hence, to dramatically different modes of planning.[5]

It is obvious that these two approaches represent woefully inadequate accounts of the value of the nonhuman world, even if we stay within wholly human-centered terms of reference. This is because the nonhuman world can and does yield many other kinds of instrumental values to humans in the absence of being physically transformed. This realization leads us on to the resource preservation approach.

The resource preservation approach covers a range of arguments that suggest that the nonhuman world should be *preserved* (i.e., *not* physically transformed) not because it is considered to be valuable in its own right but simply on account of its instrumental value to humans. (Etymologically, *conservation* carries the meaning of working with something as a slave—from *con-*, together, with, and *serve,* from *servus,* a slave—while *preservation* carries the meaning of keeping something from becoming a slave—from *pre-*, before, beforehand, or in front, and *serve.*) Because these arguments are couched in human-centered terms, environmental philosophers such as William Godfrey-Smith (now William Grey), George Sessions, and myself have given them predominantly human-centered names: the life support system argument, the

early warning system argument, the silo argument, the laboratory argument, the gymnasium argument, the art gallery argument, the cathedral argument, the monument argument, and the psychodevelopmental argument.[6] These nine arguments can be explained as follows:

(i) The *life support system argument* states that we ought to preserve this or that aspect of the nonhuman world because it is vital to our physical well-being. (Although this is listed as just one argument among nine others here, the implications of this *particular* argument are, of course, immense.)

(ii) The *early warning system argument* states that we ought to preserve this or that aspect of the nonhuman world because it is an early indicator of ecosystem deterioration (an argument that applies particularly to animals located at or near the top of food webs).

(iii) The *silo argument* states that we ought to preserve this or that aspect of the nonhuman world because it represents a repository of potentially valuable genetic information for use in medicine and agriculture and so on.

(iv) The *laboratory argument* states that we ought to preserve this or that aspect of the nonhuman world because it is of particular relevance for scientific study (e.g., the study of human origins).

(v) The *gymnasium argument* states that we ought to preserve this or that aspect of the nonhuman world because it is good for physical recreation.

(vi) The *art gallery argument* states that we ought to preserve this or that aspect of the nonhuman world because it is conducive to aesthetic pleasure and inspiration.

(vii) The *cathedral argument* states that we ought to preserve this or that aspect of the nonhuman world because it is conducive to spiritual inspiration.

(viii) The *monument argument* (from the Latin *monere*, to remind, advise) states that we ought to preserve this or that aspect of the nonhuman world because it is has a symbolic or instructional value of some kind (e.g., the eagle as a symbol of freedom).

(ix) Finally, the *psychodevelopmental argument* states that we ought to preserve this or that aspect of the nonhuman world on the grounds that contact with nonhuman nature is essential for healthy psychological development. This last argument is effectively the psychological counterpart to the (physically based) life support system argument.

Whereas the unrestrained exploitation and expansionism approach and the resource conservation and development approach can be thought of as emphasizing the physical transformation value of the nonhuman world to humans, these nine resource preservation arguments can be thought of as emphasizing other general kinds of instrumental values: the life support system argument emphasizes the *physical nourishment value* of the nonhuman world to humans; the early warning system argument, the laboratory argument, and the silo argument emphasize the *informational value* of the nonhuman world to humans; the gymnasium argument, the art gallery argument, and the cathedral argument emphasize the *experiential value* of the nonhuman world to humans; the monument argument emphasizes the

symbolic or *instructional value* of the nonhuman world to humans; and the psychodevelopmental argument emphasizes the *psychological nourishment value* of the nonhuman world to humans (where *psychological nourishment value* emphasizes the nourishment of a deeper or more primitive level of psychological development than the other experientially based arguments to which we have referred).

The three general approaches that we have referred to so far all argue that we should *exploit*, *conserve*, or *preserve* the nonhuman world purely on account of its instrumental value to humans. Thus, although these approaches issue in fundamentally different kinds of environmental outcomes they are nevertheless all thoroughly anthropocentric in their general orientation. Humans are implicitly or explicitly considered to be the crown of creation, the measure of all things, the source of all value. But this is a general orientation that can no longer be defended, as we will see.

3. TRADITIONAL (ANTHROPOCENTRIC) INTRINSIC VALUE APPROACHES AND THEIR PROBLEMS

It is easy to recognize and speak of some entities as being useful, that is, as having an instrumental value. But it is a much more difficult and controversial matter to identify what it is that makes something valuable *in its own right*, that is, *intrinsically valuable* (from the Late Latin *intrinsecus*, inwardly).

The classical Western religious and secular answers to this question do not bear much critical scrutiny. The classical Western religious answer has been along the lines that only humans are intrinsically valuable because only humans have a "soul"—a spiritual aspect that unites them with the ultimate source of goodness, God—and only humans have a soul because only humans are made in the image of a God to Whom they have a privileged personal relationship—that sort of thing. The classical Western secular answer to this question has been along the lines that only humans are intrinsically valuable because only humans are "rational," and this capacity (and its implications) is so significant that it places humans in an altogether separate realm to that of the rest of brute creation—that sort of thing.

With the success of the Western scientific picture of reality both of these answers have come to be seen as increasingly implausible, as more and more like self-serving cultural myths. Naturalistic evolutionary accounts of everything from the coming into being of the cosmos to the coming into being of humans as one branch of development on the evolutionary tree of life have demolished traditional Western religious accounts of the genesis of the world in general and humans in particular. The study of areas such as evolutionary biology, ethology, neurophysiology, neuropsychology, comparative psychology, linguistics, and artificial intelligence—aspects of which are now often being grouped together under the umbrella term of *cognitive science*—offers increasingly compelling evidence of human relatedness to other animals and the fact that other animals can, to varying degrees, also have mental representations, solve problems, use tools, engage in symbolic behavior, possess a sense of self, and so on.

But even this breakdown of the human/animal cognitive divide seems, these days,

simply *irrelevant* to the appropriate focus of ethical concern. As Peter Singer and other animal liberationists have argued (following the lead of Jeremy Bentham [1748–1832], the founding father of utilitarianism), surely the relevant question here is not "Can this entity *think?*" but rather "Can this entity *feel?*" A new-born baby is hardly "rational," but that seems irrelevant to the question of why we should not torture it. We shouldn't torture it because it would suffer. Thus, not only has the traditional secular defence of humans being in a fundamentally separate category to the rest of earthly creation collapsed in its own right, but it also stands revealed as irrelevant to the question of what we should and should not consider to be intrinsically valuable.

So far as the traditional religious defence goes, the evidence of the cognitive sciences is that the brain is in the business of continuously constructing models of the world, *including a model of who we take ourselves to be*, and that there is no "I," self, or mysterious Factor X—nothing that *could* answer to the idea of an enduring "soul"—that exists beyond the death of our brains. Moreover, we now know that the mind-brain connection is so intimate, and our brains so similar in many ways to those of our evolutionary cousins, that even if one were to persist in arguing for the existence of a soul, one would be hard pressed to offer any rational explanation as to why souls should only attach to humans and not to other kinds of animals as well.

It should be obvious, then, even from this brief survey, that the traditional religious and secular defenses of anthropocentrism are no longer tenable. But what should take their place? How are we to articulate the positive alternative(s) to a purely anthropocentric approach to the world around us?

4. CONTEMPORARY INTRINSIC VALUE APPROACHES AND THEIR PROBLEMS

Environmental philosophers have advanced three main nonanthropocentric approaches to the question of intrinsic value: the sentience approach, the life approach, and the holistic integrity approach. When you think about it, it is easy to see that there are obvious and compelling reasons why sentience, life, and holistic integrity have seemed to be the three main stops beyond the realm of anthropocentrism (can you think of any *other* particularly obvious ones?) and the main overviews of the field have therefore all tended to concentrate on these approaches. We will consider each of them in turn, evaluating them in terms of both their *rational foundations* and their *practical consequences.*

In considering each approach, I will indicate its main early and contemporary exponents and then immediately move on to outline what I consider to be the *general form* of the argument (i.e., the rational foundations) for that approach. Moreover, I will outline the general form of the argument in each case in what I consider to be its *strongest form.* Any particular exponent of these approaches (e.g., Professor Y) is, of course, free to object and say "Well, actually, *my* argument for approach X is a bit different to the way in which Fox presents the general form of the argument for this approach in that (etc.)." However, I am claiming that if there is something wrong with the general form of the argument (i.e., the rational foundations) for approach

X even when presented in its strongest form, then these objections—and possibly others as well—will almost certainly apply to the particular form of Professor Y's argument, regardless of its peculiarities. Further, I am also claiming that the objections I make to the *practical consequences* of each of these approaches apply to *any* approach—regardless of its rational foundations—that focuses, as these do, purely and simply on the intrinsic value of sentient creatures, individual life-forms in general, or self-renewing wholes.

These are strong claims. Accordingly, in what follows I provide what is, as far as I am aware, the most detailed point-by-point critique of these approaches available in one place in the environmental philosophical literature to date.

One final and, regrettably, somewhat technical point needs to be borne in mind at the outset. Some philosophers attempt to make a distinction between *subjectivist* and *objectivist* approaches to intrinsic value. To argue that something is intrinsically valuable in a subjective sense is to argue that *it is or can be valued for its own sake* and not because of any particular usefulness that it might happen to have to the subject that is doing the valuing. To argue that something is intrinsically valuable in an objective sense is to argue that *it is valuable in its own right*, regardless of whether or not any entity happens to value it.

The subjectivist approach has a hard time in life. To begin with we can ask the question: is it really *possible* for something to be valued purely *for its own sake* and not because of any particular usefulness that it might happen to have to the subject that is doing the valuing? Or is the thing that the subject claims to value *for its own sake* in fact just being valued for its usefulness—perhaps pleasureableness—in some relatively rarified and subtle way? As this challenge indicates, it is very easy to call into doubt the validity of any claim to valuing something purely *for its own sake*; hence, my earlier qualification to the effect that some philosophers *attempt* to make a distinction between two approaches to intrinsic value. In reality, it seems that the subjectivist approach to intrinsic value is always in danger of collapsing into instrumentalism on the one side or, if toughened up, being transmuted into an objectivist approach on the other side.

In addition to this difficulty, the subjectivist approach to intrinsic value makes a weak claim in any case, and one that is constantly shadowed by *relativism*: you value X *for its own sake*; I don't—so what? In contrast, the objectivist approach to intrinsic value makes a very strong claim, and one that is *morally* useful because it naturally issues in conclusions that are morally binding: X *is* intrinsically valuable, therefore you *should* treat X in these ways and not in those ways.

Most environmental philosophers are concerned with the strong, objectivist, and, hence, morally useful sense of intrinsic value rather than the weak, subjectivist, and, hence, relativism prone sense of this term (although the latter approach has in fact been resorted to by a few environmental philosophers who have perhaps despaired of overcoming the formidable problems that confront the development of a satisfactory objectivist approach to environmental ethics). Thus, unless otherwise specified, we will be concerned here and throughout with the objectivist sense of intrinsic value, which has justifiably been the main focus of environmental philosophical concern.

Now to the analysis itself.

i. The Sentience Approach

The sentience approach, variously referred to as the *animal liberation* or *animal rights* approach, states that an entity is intrinsically valuable—deserving of moral consideration in its own right—if it is sentient, that is, if it is capable of feeling (from the Latin *sentire*, to feel or to perceive). The outstanding "early" statement of this view (which, as I have already indicated, in this field of inquiry means prior to about 1970) was expressed by Jeremy Bentham (1748–1832); variations of it have been advanced in the contemporary environmental philosophy literature most notably by Peter Singer (under the trademark, if you like, of *animal liberation*) and, in a rather more restricted form, by Tom Regan (under the trademark of *animal rights*).[7]

Taking Singer's more inclusive approach as our primary guide to the sentience approach, we can say that, according to the advocates of this approach, an entity should matter to us—we should take its interests into account in the context of actions we take that might affect it—if it has the capacity of mattering to itself. If, on the other hand, it can't matter to itself—if it can't feel—then, as Peter Singer says, "nothing that we can do to it could possibly make any difference to its welfare ... [and, consequently,] there is nothing to be taken into account."[8] This is why it makes sense to most people (including most philosophers and cognitive scientists) to say that we should not be cruel to cats or dogs, but doesn't make sense to most people (or to most philosophers or cognitive scientists) to say that we should not be cruel to carrots or to asphalt. (Indeed, most people find it so wacky to say this that it is often regarded as humorous.)

The rational foundations (or argumentative logic) of the sentience approach seem very sound indeed. If the force of the argument is not immediately obvious to someone then it can be spelt out in a step-by-step fashion by beginning with an appeal to that person's own experience and then bringing in nothing more sophisticated than widely accepted (and highly defensible) notions of *rationality*, in the sense of belief based on the best available evidence, and *reasonableness*, in the sense of impartiality—treating similar cases in a similar way. First, one knows first-hand, from one's own *experience*, that one is capable of feeling, that one is sentient. A particular, but tremendously important, consequence of this is that we know that we do not like to be hurt (physically or psychologically). This is such a primary fact of our existence that we unreservedly expect others who can comprehend this wish to respect it, and we consider ourselves entitled to escape from or oppose any entity that does not respect it, whether they can comprehend it or not. Second, the evidence of the cognitive sciences (not to mention our own experience of others!) is such that it is entirely *irrational* for one to hold the view that one is sentient but that no other entities are. And, third, it is entirely *unreasonable* to know (i) that you can be hurt and do not wish to be, and (ii) that other entities can also be hurt and do not wish to be, and yet (iii) to expect other entities to respect your wish—or else!—while you ride roughshod over theirs.

For advocates of the sentience approach in its purest form, sentience represents "the *only* defensible boundary of concern for the interests of others" (emphasis added).[9] Thus, the elaboration of this approach into a comprehensive environmental ethic looks like this: first, we should recognize the intrinsic value of *all* sentient

entities, not just humans; second, and as a direct consequence of this, we should ensure that, in our decisions, we take into consideration not only what is of instrumental value to humans but also what is of instrumental value to *nonhuman* sentient entities. This means, for example, that we should aim to preserve rainforests not only because of their various instrumental values to humans but also because of (i) the *intrinsic value* of the sentient creatures that live in them; (ii) the *instrumental values* of the rainforests to the sentient creatures that live in them; and (iii) the *instrumental values* of the rainforests to nonhuman sentient creatures that live elsewhere.

The sentience approach appears to make eminent good sense at face value and, upon further examination, to be built upon very strong rational foundations. Unfortunately, however, it turns out that this approach logically implies *practical consequences* in the ecological realm that environmentally concerned people would, in the main, consider to be highly *objectionable.* There are at least seven different kinds of problems to be considered here.[10]

First, the sentience approach is incapable of distinguishing between non-sentient life (such as plants) and non-life (such as rocks and tin cans). This follows from the fact that, since only sentient entities are considered to be intrinsically valuable, a world devoid of sentient life-forms is considered to possess no intrinsic value at all. Thus, from the perspective of this approach, a world that is luxuriantly rich in plant life but that possesses no sentient life-forms whatsoever is considered to be just as intrinsically valuable (or, rather, value*less*) as a barren asteroid or a tin can. (As a professor of philosophy who advocated the sentience approach once said to me, if a very complex world existed somewhere that contained no sentient entities then its existence or otherwise would be, to him, "a matter of indifference.")

Second, the sentience approach is incapable of distinguishing between monoculture and diversity. From the perspective of this approach there is just as much intrinsic value in a world of, say, a trillion (i.e., a million million) sentient creatures of the *same* kind as there is in a world of a trillion sentient creatures made up of a million *different* kinds of creatures.

Having now introduced the first of our examples involving a comparison of entities that *are* deemed to be intrinsically valuable, let me immediately make it explicit, in order to avoid any pedantic objections, that the examples I am giving assume, *here and throughout,* all the relevant "other things being equal" clauses in each case. For example, in regard to the above monoculture versus diversity example we are, of course, assuming that the average level of sentience for each creature is the same in both cases. We may also want to assume that the average level of pleasure and pain for each sentient creature is the same in both cases, depending upon the particular form of the sentience approach with which we are concerned. These "other things being equal" clauses serve to underline the fact that none of the examples being advanced here represents a perverse interpretation of whatever approach is under discussion—an interpretation that applies, if it applies at all, only under certain idiosyncratic conditions. Rather, each of these examples represents a straightforward *logical consequence* of whatever approach is under consideration—even if the advocates of that approach might prefer to ignore it or wish it away.

The third problem with the sentience approach is that it is blind to the existence of species *per se*—irrespective of the question of diversity. This is because a species

per se cannot feel, only the members of a (sentient) species can feel. Thus, from the perspective of this approach, the *last* one hundred animals of a species are no more intrinsically valuable than one hundred members of that species chosen at random from a population of twenty billion. However, from an ecological point of view, this might represent the difference between the extinction of a species and one hundred representatives of a species that exists in plague proportions.

The fourth problem is that the sentience approach is blind to the existence of ecosystems. Again, this is because an ecosystem *per se* cannot feel, only the sentient members of an ecosystem can feel. This means that there is just as much intrinsic value in, say, a zoo full of sentient animals as there is in an ecosystem with an identical population of sentient animals.

The fifth problem with this approach is that it is incapable of distinguishing between introduced and indigenous animals. From the perspective of this approach there is just as much intrinsic value in the existence of a million animals that have been introduced to the unique flora and fauna of the Australian bush as there is in a million native Australian animals of similar complexity.

The sixth problem with this approach is that it is incapable of distinguishing between domesticated and wild animals. From the perspective of this approach there could easily be just as much intrinsic value in a totally domesticated world of cows, sheep, pigs, cats, and dogs as in a world of polar bears, eagles, jaguars, elephants, and kangaroos.

Finally, the seventh problem with this approach is that of nonhuman predation. If it is bad for humans to cause suffering by killing other animals then it is also bad for nonhuman animals to cause suffering by killing other animals. From the point of view of the animal being killed, it *doesn't matter* whether it is a human or some other animal that is causing the suffering—suffering is suffering irrespective of the identity of the predator. The problem, of course, is this: nonhuman animals haven't caught up on the animal liberation literature and so don't know that, on this view, it is wrong for them to tear other animals apart and that they should therefore try to change their diet. However, since humans do know that this is wrong, it follows that they have not only a *primary* duty not to cause suffering to other animals themselves but also a *secondary* duty to stop other animals causing suffering when this is at all feasible. The practical implication is that humans should seek to eliminate predation as much as possible; for example, we could seek to fence lions off from their prey and raise them on a vegetarian diet; if this proved impossible we could at least kill their prey humanely and then feed it to them off the back of a truck—never mind that this represents ecological lunacy.

In the face of these problems, one can see that there are good reasons why advocates of the sentience approach have chosen to devote their energies to issues that have more to do with what we might think of as "domestic" matters, where an appeal for the preservation of "humane" values is most likely to work, than to issues to do with the wild, where appeals for the preservation of "humane" values can rapidly seem out of place, wrongheaded, harmful, and even ludicrous. Thus, advocates of the sentience approach have chosen to highlight the practical consequences that they believe follow from their approach in regard to our use of nonhuman animals for such things as factory farming, scientific research, zoos, circuses, and

hunting. On the other hand, they have had little, if anything, to say about issues such as the value (as distinct from the non-value) of non-sentient life-forms, the value of biodiversity *per se*, the value of species *per se*, the value of ecosystems *per se*, the value of indigenous versus introduced animals, the value of wild versus domesticated animals, and, finally, the particularly awkward question (for them) of nonhuman predation. The reason for this is easy to see: whatever the *personal opinions* of advocates of the sentience approach might happen to be in regard to these problems, their *theoretical approach* is simply incapable of dealing with these problems in any direct fashion.

On the basis of the critical analysis presented here, then, we can conclude that the sentience approach gets off to a very good start—being based on solid rational foundations—only to come to grief in a whole range of ways at the level of practical consequences. The very best that we can say about this approach, therefore, is that it is *limited.* However correct it might be in some respects, it cannot, as it stands, generate a comprehensive environmental ethic that would be acceptable to most environmentally concerned people.

But can either of the other main nonanthropocentric approaches do any better?

ii. The Life Approach

The second main nonanthropocentric criterion of intrinsic value advanced in the environmental philosophy literature is that of life. The outstanding "early" (i.e., pre-1970) statement of this approach was advanced by Albert Schweitzer (1875–1965) with his "reverence for life" ethic; variations of it have been advanced in the contemporary environmental philosophy literature most notably by Kenneth Goodpaster and Paul Taylor.[11]

According to this approach, living things can be said to *embody* (i.e., give concrete form to) certain interests—even if, like plants, they are not capable of feeling—and these interests should be taken into consideration in the context of actions we take that might affect them. In particular, living things can be said to embody an overwhelming interest in maintaining their own integrity. (If one wishes to argue that plants—or life-forms in general—are capable of *feeling* in any significant sense of the term and are intrinsically valuable for that reason then one is back with the sentience approach, with all its attendant problems.)

As straightforward as the life approach might be to state in its essence, and as appealing as it might at first sound, it is nevertheless riddled with problems from top to bottom. To begin with, its rational foundations are untenable. The logic of the argument for life being the appropriate criterion of intrinsic value relies, as already stated, on the idea that living things have an *interest* of some kind or at some level in maintaining their own existence. After all, if a living thing does not have such an interest, then, as Singer says (and it bears repeating), "nothing that we can do to it could possibly make any difference to its welfare ... [and, consequently,] there is nothing to be taken into account."[12] The problem, however, is that the claim that living things do have such an interest falls apart upon further analysis.[13]

To say that living things have an *interest* of some kind or at some level in maintain-

ing their own existence is to suggest that they actually "strive," "aim," or "desire" (or some such equivalent) to maintain their own existence. However, to genuinely strive or aim or desire to do something implies an *intention*; that the entity concerned has, in other words, a goal *in mind*—at however rudimentary a level. Properly understood, "striving," "aiming," "desiring," and so forth are examples of intentional or psychological language rather than language that refers to the purely physical world; they are terms that have to do, essentially, with explanations for things in terms of *goals* and *reasons* (at however rudimentary a level these may be formulated) rather than purely physical *forces* and *causes*. Thus, it is not at all clear how something that cannot feel anything could possibly be said to have any kind of intention at all. That is, it is difficult to make any sense of the notion that something *can* simply "embody an interest" in the absence of some affective component (the possession of which then returns us to the argument for the sentience approach). Instead, it is far more reasonable simply to say that living things are constituted in such a way as to renew themselves on an ongoing basis. They don't "strive," "aim," "desire," or "intend"; rather, they simply happen to be constituted in such a way that their constitutive processes continuously remake themselves.

Peter Singer, the most prominent advocate of the sentience approach, responds directly to Schweitzer's and Taylor's arguments for the life approach along essentially the same lines:

> The problem with the defenses offered by both Schweitzer and Taylor for their ethical views is that they use language metaphorically and then argue as if what they had said was literally true. We may often talk about plants "seeking" water or light so that they can survive, and this way of thinking about plants makes it easier to accept talk of their "will to live," or of them "pursuing" their own good. But once we stop to reflect on the fact that plants are not conscious and cannot engage in any intentional behavior, it is clear that all this language is metaphorical; one might just as well say that a river is pursuing its own good and striving to reach the sea, or that the "good" of a guided missile is to blow itself up along with its target ... [In fact, however,] it is possible to give a purely physical explanation of what is happening; and in the absence of consciousness, there is no good reason why we should have greater respect for the physical processes that govern the growth and decay of living things than we have for those that govern non-living things.[14]

Beyond these problems with its rational foundations, the life approach also suffers from many of the same problems as the sentience approach at the level of practical consequences. This follows from the fact that the life approach, like the sentience approach, is an *individualistic* approach, since it adopts the conventional understanding of living things as consisting of *individual* plants and animals. Thus, for example, Paul Taylor, whose book *Respect for Life* represents the major extended development of the life approach to date, insists that it is only "individual organisms (not supraorganisms or quasi-organisms [such as species, ecosystems, and the ecosphere]) that ... are seen to be organisms having a good of their own"—and, hence, to be intrinsically valuable.[15] (If one sees holistic entities such as species, ecosystems, and the ecosphere as being intrinsically valuable then one is dealing with the holistic integrity approach, which we will come to next.)

This conventional understanding of living things means that, in common with the

sentience approach, the life approach is (i) incapable of distinguishing between monoculture and diversity, since one can have just as much life and, hence, intrinsic value in both cases; (ii) blind to the existence of species *per se*, since species *per se* are not alive on this understanding; (iii) blind to the existence of ecosystems *per se*, since ecosystems *per se* are not alive on this understanding; (iv) incapable of distinguishing between introduced and indigenous life-forms, since the former are just as alive and, hence, intrinsically valuable as the latter; (v) incapable of distinguishing between domesticated and wild life-forms, since, again, the former are just as alive and, hence, intrinsically valuable as the latter; and (vi) analogously with the sentience approach in regard to vegetarianism, capable of being pressed into service as an argument against killing *any* forms of life—even for food. (No one, of course, wants to take the life approach *this* far, for obvious reasons. But, with yummy "hi-tech" food no doubt just around the corner, *watch this space*—in this line of work you just never know!)

In addition to these problems, which reiterate all but the first of the seven kinds of problems that attend the sentience approach, the life approach also implies some entirely new practical consequences that environmentally concerned people would, again, in the main, consider to be highly objectionable. Specifically, the life approach is, quite obviously, a *pro-life* approach, with all that this entails. This means that the argument that life *per se* is intrinsically valuable is necessarily an argument against both abortion—the termination of life near its beginning—and euthanasia—the termination of life toward its end. Yet these are likely to be among the last things that most environmentally concerned people would wish to promote—on ecological grounds as well as humanitarian grounds. The ecological grounds concern the already severe and yet exponentially growing problem of human overpopulation and all that that entails. The humanitarian grounds concern the desire to minimize the present and anticipated psychological and physical distress of a pregnant woman or a dying person (which means that these grounds are essentially sentience based grounds).

However, that is how things stand: to be pro-life for the purposes of environmental ethics is—in the absence of some additional, rescuing strategy—to adopt an anti-abortion stance and an anti-euthanasia stance in the human realm. One cannot advance an argument for environmental purposes and simultaneously deny its consequences in other areas. It is irrational to pick and choose in that way.

Finally, beyond even the range of problems that attend both the rational foundations and the practical consequences of the life approach, there is a problem that lies at the heart of this approach in terms of knowing what it is we are referring to in the first place. In other words, how are we to define life? If we move beyond the everyday, conventional understanding of life as "individual plants and animals" and attempt to provide a more rigorous, formal definition then we find ourselves moving in the following direction. Following the lead of the influential biologists Humberto Maturana and Francisco Varela, we can say that the essence of living systems is that they are primarily and continuously involved in renewing their own organizational activity and structure, that is, with making and remaking *themselves* on an ongoing basis; hence, Maturana and Varela's characterization of living systems as *autopoietic* systems (from Greek *autos*, self, and *poiesis*, a making).[16] Once these self-making, or autopoi-

etic, processes cease, the entity in question is no longer alive. Autopoiesis is the quintessential feature of living systems.

In the face of this formal characterization of living systems it becomes increasingly difficult to limit the definition of life to the conventional understanding of "individual plants and animals." Rather, the autopoietic processes that characterize living systems seem to apply not only to individual plants and animals but also to ecological wholes such as ecosystems and the ecosphere. And if this is the case then the life approach transforms into a far more general approach than that of respect for life in the conventional sense. Rather, it becomes an approach that attributes intrinsic value to autopoietic systems in general, or, in more user-friendly terms, an approach that attributes intrinsic value to systems that make and renew their own *holistic integrity*. This fact, together with the fact that the conventional understanding of life covers so much of the ecological world in any case, enables us to see why the fifteen-to-twenty year old debate in environmental ethics has tended to come down to one of sentience versus holistic integrity.[17]

On the basis of the critical analysis presented here, then, the life approach has, to put it bluntly, nothing to recommend it. First, it is based on untenable rational foundations. Second, it issues in practical consequences that most environmentally concerned people would find highly objectionable (it shares many of these practical consequences with the sentience approach, but introduces two disturbing new ones of its own—an anti-abortion stance and an anti-euthanasia stance). And third, it is, in any case, in continual danger of losing its individualistic grip, as it were, and slipping into an argument for the next approach we will consider—the holistic integrity approach.

iii. The Holistic Integrity Approach

The third and final main nonanthropocentric criterion of intrinsic value advanced in the environmental philosophy literature is that of holistic integrity—or some term that does similar work. (We could employ the more accurate term *autopoiesis* here, but that technical, and, as noted, not particularly user-friendly term, is, as yet, not so widely known and does not initially aid one's understanding as much as the less specific but more readily comprehensible *holistic integrity* label.) The outstanding "early" (again, pre-1970) statement of this approach was advanced by Aldo Leopold (1887–1948) with his "land ethic"; variations of it have been advanced in the contemporary environmental philosophy literature most notably in a short paper by James Heffernan, which proposes some much needed revisions to Leopold's ethic, and at much greater length, but, in my view, in a weak (since subjectivist) form, in the nevertheless significant body of work by J. Baird Callicott.[18]

The argument for the holistic integrity approach has effectively been given (and given in its strongest, objectivist form) in the preceding discussion of the life approach, and so has the critique of its rational foundations.[19] The argument for the holistic integrity approach proceeds from the fact that *certain kinds* of wholes—most accurately described as autopoietic systems—are self-making and self-renewing; they actively create and maintain their own integrity. The argument proper is that these

wholes can be said to *embody* (i.e., give concrete form to) an overwhelming interest in maintaining their own integrity, and that the various expressions of this non-sentient interest should be taken into consideration in the context of actions we take that might affect them.

The critique of the rational foundations of this autopoietic recasting of the life approach is precisely the same as that given for the life approach. Although one could be forgiven for thinking that non-sentient autopoietic systems behave *as if* they wanted to maintain their own integrity, that is simply a projection of our own subjectivity, our own intentional way of understanding the world, upon them. Just as entities like stones, rivers, and guided missiles have no feelings, no subjective awareness, and so cannot literally be said to "strive," "desire," or "intend" to fall to the ground, flow to the sea, or hit their targets, so autopoietic systems, pure and simple (i.e., *non-sentient* autopoietic systems), cannot literally be said to "strive," "desire," or "intend" to maintain their own integrity. That is simply what they *do*; they are physical systems—special kinds of physical systems, to be sure, but physical systems nonetheless—and nothing more. It is a mistake to attribute intentionality to entities that do not have affective capacities, that do not have some at least rudimentary form of inner experience.

Despite its flawed rational foundations, the appeal of the holistic integrity approach lies in the fact that it seems to avoid many of the objectionable practical consequences that attend the individualistically oriented sentience and life approaches. According to the advocates of this approach, seeking to preserve holistic integrity in the ecological realm clearly means seeking to preserve the self-renewing capacity of ecosystems, and that, in turn, means seeking to preserve the *characteristic* diversity of ecosystems (following Heffernan's important modification and trimming down of Leopold's very loosely formulated "land ethic"). The upshot of this approach is that one values not only ecosystems per se and, hence, (characteristic) diversity *per se*, but also, to the extent that they contribute to the overall holistic integrity (or autopoietic functioning) of the ecosystem in which they exist or occur, species *per se*, indigenous life-forms, wild life-forms, and the various forms of non-human predation.

Although one can see the general point here, at least some of the apparent strengths of the holistic integrity approach (*vis-a-vis* the objectionable practical consequences of the previous two approaches) begin to disappear on closer examination. For example, although ecologically oriented enthusiasts can sometimes make it sound as if the ecological world is so delicately interwoven that the removal of a single strand (e.g., a single species) is enough to cause the entire fabric (e.g., an entire ecosystem) to fall apart, this is, of course, typically (although not always) far from the truth. It is often possible to remove a species—or introduce a new species for that matter—without particularly compromising the autopoietic functioning of an ecosystem at all. In these cases it is not at all clear that the holistic integrity approach offers any firm basis on which to object to the extinction of a species or the addition of a new species, since the holistic integrity (or autopoietic functioning) of the ecosystem is not in question.

Moreover, even if we assume that a species *per se* is an autopoietic entity—itself a tricky question—that simply solves half the problem at the cost of exacerbating the

other half. On the one hand, this assumption *would* enable advocates of the holistic integrity approach to object to the *loss* of a species, regardless of whether or not that compromised the integrity of an ecosystem, since that loss would in itself be a loss of something that is intrinsically valuable. However, on the other hand, this assumption would *not* enable advocates of the holistic integrity approach to object to the *addition* of an introduced species if that did not particularly affect the integrity of an ecosystem, since that addition would amount to the *addition* of something that is intrinsically valuable. Indeed, phrased in more positive terms, and carried to its obvious logical conclusion, this assumption necessarily issues in a positive recommendation *for* the addition of benign species to ecosystems!

The holistic integrity approach also implies other kinds of practical consequences that most environmentally concerned people would find objectionable. Specifically, as a more generalized form of the individualistically oriented life based argument, this "pro-life," now become "pro-autopoiesis," approach likewise issues in an anti-abortion stance and anti-euthanasia stance. Just as the criterion of life includes all the entities covered by the criterion of sentience and many more besides, so the criterion of holistic integrity includes all the entities covered by the criterion of life and many more besides. The upshot is that any argument for the intrinsic value of self-renewing collectivities such as ecosystems absolutely guarantees the intrinsic value of life forms in general. This means that any argument for the intrinsic value and, hence, protection from harm of ecosystems is necessarily an argument for the intrinsic value and, hence, protection from harm of developing embryos and people in an irreversible coma. Any argument, in other words, that guarantees the intrinsic value of entities that merely possess a holistic integrity is necessarily an anti-abortion and an anti-euthanasia argument. Yet, as we have already noted, these are among the last things that advocates of the holistic integrity criterion would wish to promote—on ecological as well as humanitarian grounds.

It is, therefore, of considerable interest to note that although there is much discussion of holistic integrity approaches in the environmental philosophical literature, there is no discussion whatsoever of abortion and euthanasia—at least in this regard. *This troubling connection has simply not been made.* Do the advocates of the life approach and the holistic integrity approach actually *want* to be seen as promoting an anti-abortion stance and an anti-euthanasia stance? It would be news to me if they did; but, then again, you never know.

Finally, there is a different kind of objection altogether that can be made *not only against the holistic integrity approach but also against the other main intrinsic value approaches we have considered.* I have left this objection until last not only to save repeating it in regard to each approach but also to emphasize the point that even the *broadest* kind of approach that has been advanced in environmental ethics to date—the holistic integrity approach—is quite inadequate for addressing many of the environmental problems that many people are vitally concerned with on a day-to-day basis. The objection I am referring to proceeds from this fact: it has seemed "natural" to environmental philosophers to develop approaches to *environmental* ethics that place their primary focus of concern on entities that are essentially products of what most people unhesitatingly refer to as the "natural" realm (i.e., entities such as animals, plants, and ecosystems) as opposed to the cultural realm (i.e., among other things, all those things that constitute the built environment).

Having said this much, however, we need to pause immediately to clarify some key terms before proceeding. The commonly employed nature/culture distinction is a philosophically loaded and semantically confusing one because humans and human cultures are, of course, themselves *part* of nature considered as a whole. We can therefore identify the distinction that is intended here far more accurately by referring to the *nature* part of this distinction as *the self-organizing realm* and to the *culture* part of this distinction as the *intentionally organized realm.* However these terms might strike you at first, they are in fact so straightforward that one virtually has to repeat them in defining them. The self-organizing realm refers to all those things in the world that have just come about by themselves, that is, *without* having been organized in any intentional way. From the perspective of contemporary science, this realm includes the physical universe and all the life-forms that have emerged in the processes of natural selection (in contrast, say, to *selective* breeding and its "hi-tech" continuation in the form of genetic engineering, both of which serve to mix the intentionally organized realm with the self-organizing realm). The intentionally organized realm, on the other hand, refers to all those things in the world that have come about as a result of being, well, as the term itself says, organized in an intentional way. Here, the most obvious examples of which we are aware include all the creations of human cultures, which we could categorize in terms of (i) things, such as tables, chairs, and buildings, (ii) imaginal-symbolic representations, such as the contents of artworks, speech, books, and theories, and (iii) social arrangements, such as families, corporate organizations, political systems, and economic systems.

The self-organizing realm and the intentionally organized realm constantly intrude upon one another, constantly interact with one another, and shade into one another with the evolutionary appearance of sentient life-forms (although there is no prize for guessing which species is responsible for having most contributed—by an overwhelming margin—to the existence of the intentionally organized realm on this particular planet). Notwithstanding these qualifications, however, it is both possible and extremely useful to distinguish these two realms for analytical purposes.

Returning, then, to the objection that is being developed here, it might be asked: But why shouldn't *environmental* ethics place its primary focus of concern on entities that are essentially products of the self-organizing realm (previously termed *the "natural" realm*)? Isn't that what environmental concern *should* be about? And the answer to that, in four words, is: *No, not only that.* The restriction of this primary focus of concern to the self-organizing realm (i.e., to animals, plants, and ecosystems) is both arbitrary and extremely limiting in terms of its wider applicability (e.g., to the built environment).

Environmental concern can be, manifestly is, and, moreover, should be directed toward all aspects of our environment—self-organizing and intentionally organized. Most of us are surrounded most of the time by an environment that has been intentionally organized (e.g., buildings, roads, cars, and all the rest) as opposed to an environment that simply organizes itself spontaneously without intentional intervention (e.g., animals and plants existing in a free and wild state). This means that *many* people are concerned not only about the state of the self-organizing realm of existence but also about the state of the intentionally organized realm of existence *per se.* For example, they might be deeply upset about a proposal to replace an old harbor-side warehouse, now converted to art studios, galleries, cafes, and fruit and

vegetable markets, with a ten story office block—*even if the ecological effects of such a development were no worse than the existing situation.* Yet none of the environmental ethics we have considered—including the holistic integrity approach—has anything *directly* to say about such a proposal if it doesn't especially harm animals, plants, or interfere with the autopoietic functioning of the ecosystem within which it occurs.

Consider the following examples too: (i) locating a dreary, suburban-style brick-and-tile house in the midst of rolling countryside; (ii) litter on a deserted beach; (iii) mining on a site that is sacred to aboriginal people. Once again, none of the environmental ethics we have considered offers any direct theoretical leverage that would enable us to object to the first two situations if they don't especially harm animals, plants, or interfere with the autopoietic functioning of the ecosystem within which they occur. Mining offers a better target for these approaches, but they will still miss the *point* of this particular objection, which is this: although the approaches we have considered allow us to object to mining on the basis of considerations regarding sentience, life, or autopoietic functioning, none of them offers any direct theoretical leverage that would enable us to object to mining on a sacred site *on the grounds that it is a sacred site.*

People can get very upset over the kinds of things we have just considered. Is their upsetness, then, unjustified? Does it simply express *their* personal, perhaps aesthetic, preferences in a particularly moody way, or does it reflect a legitimate source of *moral* concern? If we think the latter, as I do, then it is clear that a far more comprehensive approach to environmental ethics is required if we are to do justice to the full range of our environmental concerns. We need, in other words, an approach to environmental ethics that is *deep* enough to cover issues that arise in the self-organizing realm as well as the intentionally organized realm.

On the basis of the critical analysis presented here, then, the holistic integrity approach, like the life approach from which it proceeds, is fatally flawed. First, it too is based on untenable rational foundations. Second, it is not at all clear that it solves all the major practical problems that it presumes to solve (e.g., it may have nothing to say about the loss of species if that loss is environmentally benign and it would certainly be hard pressed to have anything critical to say about benign additions to an ecosystem). Third, it too issues in practical consequences that most environmentally concerned people would find highly objectionable (an anti-abortion stance and an anti-euthanasia stance). And, finally, *in common with each of the other intrinsic value approaches we have examined,* it has nothing directly to say about many issues relating to the human environment that are significant to a great number of environmentally concerned people.

5. CONCLUSION: IMPLICATIONS AND RECOMMENDATIONS, OR: WELCOME TO THE PRESSURE-COOKER

This critical overview of environmental ethics reveals a pressure-cooker situation for all those concerned with a thought-through approach to environmental problems (and can we afford any other kind?), for the following reasons. First, clarification of the ethical basis of environmental concern is an essential and, given present

trends, increasingly urgent task, since, as E. O. Wilson has said, in the final analysis conservation *does* "boil down to a decision of ethics based on empirical knowledge."[20] Second, the rational foundations—let alone some of the practical consequences—of purely anthropocentric approaches to the nonhuman world are deeply flawed and can no longer be defended. And yet, third, there are major problems with the main attempts to develop a nonanthropocentric alternative to these approaches.

The problems that attend the main nonanthropocentric intrinsic value approaches can essentially be summarized as follows. First, two of the three main approaches we have considered are based on flawed rational foundations. Second, all of these approaches suffer from a *range* of objectionable practical consequences. And third, none of these approaches is comprehensive enough in scope to deal directly with the full range of environmental problems with which people are concerned on a day-to-day level.

We could easily note at this point that environmental ethics is a young field—that it's been a "going concern" for about fifteen years—and thus perhaps justifiably endorse E. O. Wilson's time-frame when he says that "Environmental ethics, still a small and neglected branch of intellectual activity, deserves to become a major branch of the humanities during the next hundred years."[21] (You don't expect relativity theory or quantum theory just fifteen years after the beginnings of serious experimental physics—and we may well be dealing here with moral problems of comparable difficulty.) Yet, as Wilson would also be among the very first to say, we need to act to protect life on earth *now*. Thus, the pressure-cooker situation for those concerned with a thought-through approach to environmental problems.

There are really only two general recommendations that one can make in the light of this analysis. The first is that people working in the field of environmental philosophy have no choice but to redouble their efforts if they are to develop an approach that offers (i) a solidly grounded, (ii) genuinely comprehensive, and (iii), hopefully, highly accessible framework for thought and action that (iv) does not issue in objectionable consequences and that (v) does far greater justice to the *complexity* of the environmental (and other) issues with which we are faced than the main approaches that are presently on offer. An environmental ethic that is adequate to the problems with which we are faced will, at a minimum, need to avoid all of the problems that we have considered herein—no mean feat! This may seem like a depressing conclusion in one sense, but, on the other hand, a clear recognition of the problems and limitations of existing approaches should really serve, as in the best scientific work, as a *positive* stimulus to the development of better approaches. (For my own part, I am in the process of developing a new and far more comprehensive approach to environmental ethics in a book-length work in progress, and related work, that does in fact attempt to deliver the goods in regard to all of the above matters.)

The second recommendation applies to people who work outside the field of environmental philosophy but who use its tools—whether implicitly, in terms of having their own "personal philosophy" on these matters (and who doesn't?), or explicitly, in terms of deliberately incorporating some of this thinking into policy documents and so on. The recommendation is simply that one needs to treat these tools—these limited, often flawed, and, yet, nevertheless *indispensable* tools!—with a

certain degree of caution. No one has the answer yet—even though we needed it yesterday—and to act as if one of these approaches is the answer is to forget that "for every complex problem there is a solution that's simple, neat—and *wrong*."[22]

Acknowledgement

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Notes and References

1. For more on the anthropocentric nature of Western thinking past and present, as well as a guide to other work on this theme, see my paper "The Deep Ecology-Ecofeminism Debate and its Parallels," Environmental Ethics 11 (1989): 5–25, reprinted in *Environmental Philosophy: From Animal Rights to Radical Ecology*, gen. ed. M. Zimmerman (Englewood Cliffs, New Jersey: Prentice Hall, 1993), pp. 213–32; and chapter 1 of my book *Toward a Transpersonal Ecology: Developing New Foundations for Environmentalism* (Boston and London: Shambhala Publications, 1990), reprint edition forthcoming (1995) from the State University of New York Press in the U.S. and Green Books in the U.K.
2. The U.S. based journal *Environmental Ethics* was launched in 1979. The Canadian based journal *The Trumpeter: Journal of Ecosophy* followed in 1983. The first British based journal of this kind, *Environmental Values*, was launched in 1992. The relevant addresses for these journals are: *Environmental Ethics*: Professor Eugene C. Hargrove, Editor in Chief, Department of Philosophy, University of North Texas, P.O. Box 13496, Denton, Texas, USA 76203-3496; *The Trumpeter*: Professor Alan R. Drengson, Editor in Chief, P.O. Box 5853 Stn B, Victoria, British Columbia, Canada V8R 6S8; *Environmental Values*: Mr. Alan Holland, Editor, Department of Philosophy, Lancaster University, Lancaster, UK LA1 4YG.
3. For an alarming, publically reported example of this latter point—one which involved the editor of *Environmental Ethics*, the longest established journal in this field—see *Toward a Transpersonal Ecology*, pp. 12–13.
4. Edward O. Wilson, "Conservation: The Next Hundred Years," in *Conservation for the Twenty-First Century*, ed. D. Western and M. Pearl (Oxford University Press: New York and Oxford, 1989), p. 7.
5. For considerably more detail on these two commonly known and historically extremely important approaches, both of which I am only briefly noting here, see *Toward a Transpersonal Ecology*, pp. 152–54.
6. See *Toward a Transpersonal Ecology*, pp. 154–61, for the most extensive listing of these arguments to date, a guide to relevant sources, and a guide to which term was formulated by who.
7. Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* (1789), see ch. 17, sec. 1; Peter Singer, *Animal Liberation* (New York: Avon Books, 1975); and Tom Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 1983).
8. Singer, *Animal Liberation*, p. 8.
9. Ibid., p. 9.
10. For influential earlier (but less systematically set out) statements of many of these points, see, in particular, John Rodman, "The Liberation of Nature?," *Inquiry* 20 (1977): 83–131; J. Baird Callicott, "Animal Liberation: A Triangular Affair," *Environmental Ethics* 2 (1980): 311–38 (reprinted in *The Animal Rights/Environmental Ethics Debate: The Environmental Perspective*, ed. Eugene Hargrove [Albany, New York: State University of New York Press, 1992], pp. 37–69); Mark Sagoff, "Animal Liberation and Environmental Ethics: Bad Marriage, Quick Divorce," *Osgoode Hall Law Journal* 22 (1984): 297–307 (reprinted in *Environmental Philosophy: From Animal Rights to Radical Ecology*, pp. 84–94); and J. Baird Callicott, review of *The Case for Animal Rights*, by Tom Regan, in *Environmental Ethics* 7 (1985): 365–72. It should also be noted that critics of the sentience approach were not always the first to raise these points. For example, Singer raised the issue of nonhuman predation—which critics such as Callicott have viewed as the "Achilles's heel" of the sentience approach—in his original 1975 book on

this approach (*Animal Liberation*). (Singer may not have addressed this issue satisfactorily, but that is a separate matter.)

11. Albert Schweitzer, "The Ethic of Reverence for Life" in *Animal Rights and Human Obligations*, ed. Tom Regan and Peter Singer (Englewood Cliffs, New Jersey: Prentice-Hall, 1976), pp. 133–38; Kenneth Goodpaster, "On Being Morally Considerable," *The Journal of Philosophy* 75 (1978): 308–25; and Paul Taylor, *Respect for Life: A Theory of Environmental Ethics* (Princeton: Princeton University Press, 1986).
12. Singer, *Animal Liberation*, p. 8.
13. NEWS FLASH: PHILOSOPHER ADMITS MISTAKE! Note that this represents an about-face on the stance I took in reviewing this particular approach in *Toward a Transpersonal Ecology* (see pp. 165–76). I was wrong. I was trying to put the best face on the approaches I was considering there; I was younger and wilder; what can I say? I'd like to think I was wrong in an interesting way (see the novel argument therein regarding *autopoiesis*), but I was wrong nonetheless! Ain't no way around it. Moreover, further reflection has persuaded me that even if the life approach *did* rest upon solid rational foundations I would still want to reject it on the grounds of its many objectionable practical consequences (see the argument that follows).
14. Peter Singer, *Practical Ethics*, 2nd ed. (Cambridge: Cambridge University Press, 1993), p. 279.
15. Taylor, *Respect for Life*, p. 119.
16. See, for example, Francisco Varela, Humberto Maturana, and Ricardo Uribe, "Autopoiesis: The Organization of Living Systems, Its Characterization and a Model," *Biosystems* 5 (1974): 187–96; and Humberto Maturana and Francisco Varela, *The Tree of Knowledge: The Biological Roots of Human Understanding* (Boston: Shambhala Publications, 1988). For a more detailed guide to accessible literature on this theme, see *Toward a Transpersonal Ecology*, pp. 346–47.
17. This is reflected in the recent volume edited by Eugene Hargrove, the editor of *Environmental Ethics*, entitled *The Animal Rights/Environmental Ethics Debate: The Environmental Perspective*. The term "environmental ethics" in this title really refers to what we are calling the holistic integrity approach. The conflation of these two terms, which is regularly made by holistically oriented environmental philosophers, really just represents an attempt to "steal a march" in the larger debate. It *assumes* what in fact needs to be *demonstrated*, namely, that the holistic integrity approach *is* capable of generating a more defensible environmental ethic than the sentience approach.
18. Aldo Leopold, *A Sand County Almanac* (Oxford: Oxford University Press, 1949; reprint ed. 1981); James Heffernan, "The Land Ethic: A Critical Appraisal," *Environmental Ethics* 4 (1982): 235–47; and J. Baird Callicott, "The Conceptual Foundations of the Land Ethic," in *Companion to A Sand County Almanac: Interpretive and Critical Essays*, ed. J. Baird Callicott (Madison: The University of Wisconsin Press, 1987), pp. 186–217.
19. These objections do not apply to Callicott's approach because, being a subjectivist approach to intrinsic value, it is a fundamentally different kind of approach to the objectivist approaches with which we have been concerned here. However, other kinds of criticisms certainly do apply to Callicott's approach. To begin with, see my general comments on subjectivist as opposed to objectivist approaches to intrinsic value earlier in this paper. Then, for a running critique of Callicott's approach in particular, see *Toward a Transpersonal Ecology*, pp. 189–91 and 263–65.
20. Wilson, "Conservation: The Next Hundred Years," p. 7
21. Ibid.
22. I heard this quotation from the influential Australian ecologist and process philosopher Charles Birch, but do not know its original source. I'd like to see it written over the entrance to every school, university, church, seat of government, and so on.