

Environmental Ethics: Responsibilities and Critical Perspectives

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INTRODUCTION

Bioethics concerns itself with the appropriateness of attitudes and actions affecting *living* beings. Generally the field is focussed on the particular problems that which arise in the context of the life and medical sciences, and as a result of new technologies such as *in vitro* fertilization, cloning and experimentation with embryonic tissues. Insofar as the natural environment is the context in which a great variety of living beings, including those of our own species, have their home, it is relevant, moreover, to consider how our attitudes and actions affect the physical and biological ‘envelope’ in which life takes place. This is why environmental ethics should have an important place within bioethics.

Environmental degradation is *no act of God*. In this essay I propose to discuss the various ways in which personal responsibility for one’s impact on the natural environment may come about. I begin with some general comments on ethics. I continue with a discussion of how one develops a sense of responsibility for the condition of our natural environment. After this I provide an overview of some important critical perspectives on our behaviour regarding the natural environment. I conclude by noting the significance that taking personal responsibility for the integrity of the natural environment has for oneself, as well as for our place in nature¹.

ETHICS AND ENVIRONMENTAL ETHICS

Ethics, we might say, is reflection on appropriate attitudes and action with regards to significant others². In ordinary life we may perceive that we have certain responsibilities arising out of the relationships in which we are engaged with other human beings. We may realise a responsibility for the return of an item we have borrowed, for payment when purchasing a good, or for caring for an elderly relative. We perceive these responsibilities because we have entered into relationships with someone as a borrower, as a purchaser, or as a younger relative, respectively. For us, who are involved in them, these relationships generate particular normative relations,

which in turn may generate a *sense* of responsibility or a feeling of obligation when we realise that the relevant relationship of being a borrower, a purchaser, or a younger relative, is instantiated³.

It may be argued that, even in the absence of a *sense* of responsibility, relationships, such as being a borrower or a purchaser, *set* us certain responsibilities, such as returning the item and paying for the good obtained, respectively. That is, moral responsibility is not just a subjective but also an *objective* matter. Moreover, even if the demand to take responsibility for certain actions may arise from within a specific society and its particular culture this is not to say that the norms explicitly or implicitly contained in such demands are ‘merely’ relative to a culture. Rather, on reflection we may well find sufficient reasons for the view that the norms in question should be held trans-culturally, or by any rational being. That is, we may find sufficient *arguments* for the conclusion that a certain responsibility applies to anyone in similar circumstances. Importantly, however, such arguments cannot replace the *motivating* power represented by a sense of personal responsibility or by societal demands to take certain responsibilities.

Environmental ethics, just as its cognates biomedical ethics, legal ethics, and so on, concerns reflection on appropriate action with regard to significant others as considered within a specific context. So, while biomedical ethics focuses on human actions within the context of biological research and medicine, environmental ethics does similarly regarding actions considered within the context of the natural environment. Just as some actions assessed from within the medical setting may be considered ethically correct or incorrect, some actions assessed within the context of the natural environment similarly may be a matter of moral praise or censure.

So, in a biomedical context it may become apparent that it is morally incorrect for physicians to take on a parental role with regard to their adult, conscious patients even if, ordinarily, taking charge of important decisions concerning some weaker members of society, such as one’s small children, may be quite morally appropriate. Similarly, it may become apparent within an environmental context that it is

morally problematic to rid oneself of industrial toxic waste products by putting them into the atmosphere through one's chimney even if, ordinarily, it may seem morally appropriate to use a chimney for the exhaust from one's home heating furnace.

To reflect on environmental morality is to consider how we ought to act insofar as we affect things that surround us. Although the term 'environment' strictly speaking also encompasses humanly made or artefactual things and spaces surrounding us, generally, when discussion focuses on environmental ethics, the 'environment' of concern is the natural environment. This is not to say that the humanly made environment is inconsequential from the point of view of ethics. Rather, the reason why environmental ethics focuses on the *natural* environment, in contrast to the artefactual environment, is that the former more fundamentally constitutes a condition for the flourishing of a great variety of human and non-human beings.

The natural environment, insofar as natural, affects *us* in a variety of ways, namely through the goods that it offers us on a regular basis, be they perceived as of narrowly biological importance, such as air or water, or as of aesthetic significance, such as the limpid transparency of the skies on a clear day or the ever-present but always changing sound of the sea's surf. The natural environment may also, of course, affect us through the harms that it may cause with events such as storms or diseases. Furthermore, *we* affect the natural environment through certain actions, the extremes of which may be described as pollution and over-exploitation, on the one hand, and as protection and restoration, on the other.

TAKING RESPONSIBILITY: FROM ANTHROPOCENTRISM TO GAIA-CENTRISM

In environmental ethics discussion sometimes is carried out in terms of a thing's intrinsic value as contrasted with its extrinsic value. That is, it is proposed that we can distinguish the value of a thing considered *independently of* its usefulness from the value *due to* its usefulness. We may note, for example, that each person considers her- or himself as having a value independently of her or his usefulness to others, while forks or computers or turbans may have little or no value in cultures that do not use these items. To indicate that some being has intrinsic and not just extrinsic or instrumental value, and hence ought to be accorded consideration from

the moral point of view, I speak of a morally significant being⁴.

Although the non-philosopher initially may have the impression that normative theories in ethics are intended to tell the general reader something she or he didn't already know, namely how she or he morally ought to act, careful study of the classics, such as Immanuel Kant's *Grounding of the Metaphysics of Morals*, shows that these theories have the more modest goal of providing systematic reflection on the basis of the morality that is *already* current in her or his culture⁵. Consequently, an approach to ethics such as Kant's is intended to reflect a principle of concern *common* within our culture, namely respect for each person's autonomy⁶. For example, since stealing makes the individual victim of the theft less capable of leading the life she or he would want to, such actions are morally impermissible. The foundation of the principle is straightforward since each individual values her or his autonomy, and hence can see the sense in not acting in ways that undermines a person's autonomy.

A contrasting approach to ethics, contractarianism, proposes that we need to respect the implicit as well as the explicit agreements that make society possible, since society is useful to each individual that belongs to it⁷. This reflects a principle based on the *common* notion of reciprocity and mutual beneficence. For example, since truth telling is the foundation of all agreements in society we each need to respect the injunction against lying and deceit if we choose to belong to, and benefit from, society.

Both the principle of respect for autonomy and the principle of respect for contractual relationships exclusively focus on relationships with other *human* beings, though they tacitly suppose that at least some non-human beings need to be treated with care because of the relationships that some human beings have with them. For example, my respect for the autonomy of a human being, who has befriended a certain bird, may mean that I should not harm that bird for that person's sake, even if there were no moral reasons to treat the bird care for town sake. Similarly, although according to the contractarian principle I have no reason to respect trees (with which I cannot enter into agreements since they cannot negotiate with me), my at least implicit agreement with other human beings to respect *their* interests means that I should not harm non-human beings, such as certain trees, that are significant to them. In other words, even anthropocentric or human-centred ethics supposes that we may have *indirect* responsibilities with regard to certain non-human beings.

Within the European traditional cultures utilitarianism is the first major theory of ethics that outrightly leaves the door open for *direct* consideration of the interests of non-human beings, insofar as utilitarianism seeks to represent the common notion that acting rightly is acting in such a way as to bring about happiness and to diminish unhappiness for the aggregate of those concerned⁸. Interestingly, this way of rendering the content of morality includes all sentient beings (those capable of feeling pleasure and pain) among the morally significant. In other words, according to this perspective view we ought to count very many of the animals (at least those with a developed nervous system) among those to be considered from the moral point of view.

Although the *application* of the utilitarian principle to situations involving non-human animals generally is neglected in today's industrialised societies fed by factory farms⁹, one may argue that the moral consideration of sentient beings does reflect a common value, though this value indeed is only applied to selected animals with whom special ties have been developed (for example, the squirrel that feeds in front of someone's window or the pet pig bought for one's child's amusement).

While it is true that as highly culture-dependent social beings we mostly are preoccupied with the relationships that we entertain with other human beings, on reflection we may admit an affinity with all living beings. It is this relationship with all living things that according to biocentric ethics leads to a generalised "reverence for life" and a respect for living things insofar as they are "teleological-centres-of-life¹⁰." That is, we may take note that the basis of our caring for living things is constituted by the fact that, in their various intricate ways, they are goal-directed, and, more specifically, directed toward goals with which we can empathise: survival, general flourishing of their own sort, reproduction.

Of course, respect for living things requires that one allow these beings spaces in which they *can* flourish. In fact, those spaces themselves, teeming as they are with various life forms, may be seen as analogous to organisms that are similarly composed of many organic and cellular subunits. People often do show appreciation for areas of land or sea that represent especially good environments for certain living things such as caribou or salmon. Frequently their appreciation for those areas is mingled with self-interest, insofar as they represent valuable procurement places to satisfy human needs and desires, but, interestingly, individuals can also feel that the

relationships with those areas of land or sea warrant a certain care for their own sake. It is this notion of responsibility for ecologically significant areas of land, sea and, more generally, ecosystems to which we also belong, which finds expression in Aldo Leopold's call for a Land Ethic.

Leopold proposed that we take note of the community and organic unity constituted by the complex natural environments in which human beings are mere citizens and participants. Being in community, and forming an organic unity, with the land and its inhabitants, however, supposes certain responsibilities for their care and a respect for their flourishing. Consequently, Leopold advised that one

Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise¹¹.

A variant of this appreciation for living things as part of, and dependent on, wholes larger than single organisms, is expressed in calls for the protection of species from extinction. Individuals in our cultures that, through relationship with certain kinds of living things, have developed a sense of responsibility for them, may develop a concern for the continued existence of beings *of that kind* which may issue in what Holmes Rolston calls "duties to species¹²." Respect for complex parts of our natural environment, such as ecosystems or species, may be called "ecocentric."

Ultimately, people may develop a relationship with the planet as a whole. Though this may seem too abstract to be a realistic proposition, one may note that there is a certain basis in experience for this nowadays, given our increasing understanding of the global interconnections of geological, meteorological and biological processes, and the increased mobility of our populations all over the planet. The idea that such a relationship with the globe should lead to a kind of responsibility for its wellbeing has found expression in connexion with the "Gaia Hypothesis" which argues that, since the planet as a whole in many ways appears to function as an organism, we ought to accord it care similar to the care that we would accord to individual living things¹³.

Up to this point I have surveyed a variety of relationships with beings populating our natural environment, with a view to the *sense* of responsibility that we may develop with regard to those beings. It may be noted, however, that, as already discussed

above, moral responsibility may also be regarded as an objective matter. That is, we may find that by virtue of the existence of certain relationships with morally significant others, certain responsibilities are *given*. For example, we may argue that if some human being causes an accident seriously hurting someone due to careless drinking and driving then, independently of whether this person has a *sense* of responsibility for what he or she has done, he or she should *take* responsibility for the event, and perhaps produce certain reparations to the one harmed. Although this conclusion (and similar ones) undoubtedly is captured from within a concrete cultural context (as all judgements are, of course), one may argue that such reasoning should be acceptable transculturally if the notion of ethics is to have any meaning in other cultures¹⁴.

The notion that in certain circumstances moral responsibility is given, i.e., that we may expect individuals in those circumstances to 'take responsibility' for their actions, implies that ethics attains a role beyond merely private reflection on one's morality. Thus, ethics obtains a publicly critical role. So, each one of the approaches noted above may also bring about important critiques of the activities that generate the present environmental degradation.

CRITICAL PERSPECTIVES AND ACTION

1. Moral Critiques

As noted, even purely anthropocentric approaches in ethics, such as the Kantian or the contractarian perspectives, may appeal to the duties *regarding* the natural environment that accrue to us because of our duties to other human beings. This critical approach has been further developed in various ways. It has been argued, for example, that each individual has a right to a livable environment¹⁵. Hence, those who are degrading the environment, for example, through the spraying of fields or vineyards with substances that may be hazardous to people's health, may be unjustifiably interfering with certain individuals' rights¹⁶.

Moreover, to impose certain important environmental impacts, as represented by the dissemination of genetically modified organisms in our environment or the delivery of toxic materials into our communities, on the supposition that these activities are justified by the economic benefits generated, is to impose health risks for which usually no informed consent has been obtained or compensation is provided¹⁷. One sort of response to this problem has

been to demand the application of the precautionary principle in a wide range of cases. In other words, in order to protect citizens from unagreed-to risks it is proposed that no activities be undertaken until it has been shown that they will not increase the risks to which individuals are already subject.

Furthermore, although the moral status of future generations of human beings is a matter of some debate¹⁸, various arguments may be offered to the effect that we do have responsibilities to them, and that those responsibilities are being neglected by serious environmental degradation. These arguments can be supported by Kantian and contractarian approaches, since the status of future human beings (whoever they are) as autonomous and as potential contractors, respectively, is being overlooked if our own generation degrades the environment that they will come to inherit. Since utilitarianism enjoins us to consider the effects of our actions on all those affected, given environmental degradation that lasts beyond our life spans, responsibilities for future human generations also become an issue from this perspective.

These arguments have attained further specification through the idea of sustainable development. The notion of sustainable development implies that we have a duty to meet humanity's "current needs *without* compromising the ability of future generations to meet their own needs¹⁹." A similar idea is behind the notion that the present generation has a duty of stewardship with regard to the Earth's natural environment in the light of the needs of both present and future generations²⁰. Both a duty to limit our activities to those that are sustainable in this sense and a duty of stewardship for the sake of future generations have their foundation in the idea that future human beings and their needs deserve the same kind of concern as present human beings and their needs. To suppose otherwise would call for argument, for one may ask why human beings separated from us by time should be discriminated against any more than human beings separated from us by space.

One way to interpret the demand that our activities be sustainable and take into account a duty of stewardship toward future generations is to insist on the *internalisation* of all costs. Practically this means that, if in the process of doing business there is a significant generation of possibly polluting materials or a relatively important decimation of resources, the producer of the environmental degradation should take on the costs for reparation or 'making whole' again. That is, the producer of the

pollutants is not to *externalise* these costs, in which case present and future generations would have to pay for them²¹.

As noted earlier, according to non-anthropocentric perspectives, besides duties *regarding* the various non-human beings in our natural environment (based on our duties *to* human beings) we may be said to have duties *to* them. Specifically, from the point of view that focuses on the continuity of sentience (which includes the capacity to suffer) between human beings and a large class of non-human animals, human beings accrue a responsibility for those activities that hinder the full flourishing of, and cause suffering to, sentient non-human animals. This perspective, hence, provides grounds for critique not only for species decimations through hunting and fishing but also for the human degradation (through water pollution, clear felling, or urbanisation, for example) of the ecosystems on which sentient non-human animals depend.

From the point of view of biocentric and ecocentric ethics we accrue responsibilities for interferences in the flourishing of all living things, and of ecosystems and species, respectively. This means that we should be morally concerned, among other things, about the death of many of our lakes and rivers, the rapid disappearance of tropical and temperate rainforests, the proliferation of toxins in water systems and food chains, the production and uncontrolled diffusion of genetically modified organisms, and the ultimate effect on ecosystems of nuclear wastes that will be emitting radiation for hundreds of thousands of years, among other things.

Since there has been considerable concern in European and North American countries about these matters at least since the 1970s we may come to wonder why the rate at which our environment suffers serious degradation continues, nonetheless, to increase. Part of the answer may be found in various analyses that focus on social and cultural factors.

2. Social Critiques

The attempt of individuals to take responsibility for the impact of their actions on the natural environment may largely be ineffectual if essentially contrary trends prevail in society. Such contrary trends are generally expressed in both a practice and a set of ideas or conceptual structure.

Ecological feminism (or ecofeminism), for example, argues that the abusive use of the natural environment and the oppression of women have

similar causes. Specifically, this is a critique of social practices that are based on a belief system which assigns women and nature to a subordinate moral category in relation to men and culture or society, and, furthermore, operates on the assumption that the morally superior is entitled to dominate the morally inferior. Ecofeminists, though, point out that, since there is no basis either for that belief system or for that assumption, it is difficult to see how social structures that facilitate the oppression of women and the degradation of the natural environment may be justified²².

An independent, but related, critique has been presented by the approach called social ecology. On this view, the degradation of the natural environment is the result of generalised structures of hierarchical domination in modern European cultures. Such structures are held responsible for the inequality in our societies, and also for misguided attempts to control nature through interventions such as the introduction of chemical pesticides in agriculture, large hydroelectric projects, nuclear power generating stations, and so on²³.

Closely related to ecofeminist and social ecology critiques is the analysis of our present environmentally pernicious trends as due to the prevalence of technological rationality. This perspective, developed initially by Herbert Marcuse of the Frankfurt School, argues that in modern, industrialised societies instrumental reason is applied to all beings, including humanity and non-human nature²⁴. Instrumental reason or 'means-ends rationality' is the application of reason to the attainment of ends or goals without careful assessment of the value of the goals pursued. The result is a panoply of techniques (commonly referred to as 'technologies') that focus our attention on the extrinsic value of things²⁵.

Hence, in approaching ancient forests we see them as sites for the application of sophisticated 'labour-saving' machinery facilitating lumber extraction management regimes, which generate raw material for marketing strategies; sea shores and lakes become sites for tourism development and water extraction, respectively, etc. Moreover, where formerly a person's visit to the marketplace was a manner of keeping in touch with one's community while acquiring some necessities, instrumental rationality turns it into a mere occasion for the maximisation of the respective interests of producers and consumers in an increasingly mechanised and staffless "supermarket."

3. Cultural Critiques

Although the social critiques noted above implicitly call for a rethinking of the conceptual framework supportive of our society's collusion with patriarchy, its patterns of hierarchical domination, and technological rationality, very little is usually said about what is to replace the practices and belief systems in question. Deep ecology, however, has made an attempt to speak to this latter aspect.

Deep ecology critiques 'shallow' attempts to merely reform the activities that cause environmental degradation. It critiques, for example, the introduction of various techniques and devices that allow us to continue treating the rest of nature as a *mere resource* for human desires. Deep ecology proposes that we need to think 'deeply' about our relationship with the natural environment by noting that human beings are *fundamentally* connected to the rest of nature²⁶.

For example, although introducing electrically-powered vehicles may at first seem like an improvement on current air pollution-causing conditions, it should soon be revealed as problematic since it would allow, and maybe encourage, the further expansion of roads and urbanisation into the remaining natural environment. In light of the interconnectedness of all things, deep ecology, moreover, suggests that we reconsider the special place attributed to human beings in our thinking. We are to note that, as a part of nature, we should be pleased if the rest of nature flourishes and have little reason to favour narrow human interests over the flourishing of the ecosphere as a whole.

Some ecofeminists have also made concrete suggestions on what belief systems and practices should replace the present ones. They argue, for example, that traditional ethics is deficient by its abstract appeal to reason. They argue that in environmental matters, as in other areas of life, attention needs to be placed on the relationships that individuals, as embodied and embedded beings, have developed with particular parts of the world they live in, since such relationships are the basis for an ethics of care. They suggest that such an approach would prove to be both sympathetic to the point of view of women and helpful to the development of a conceptual reconstruction of our place in relation to nature as other²⁷.

CONCLUSION

While moral critiques of our present activities focus on the responsibilities that may accrue to us as

individuals who are in particular relationships with various beings or larger parts of our environment, social critiques point to some of the underlying structural features that need to be changed and, hence, call for cooperation among individuals, if we are to avoid further environmental degradation. That is, if oppressive practices and hierarchical structures of domination are to be overcome, this will require concerted efforts by individuals throughout our societies to develop new practices and ways of relating to the natural environment. Cultural critiques, furthermore, propose ways of envisioning a different place for human beings *within* nature.

Even if we only agree with *some* of the critiques offered by environmental ethicists, insofar as we see the urgency of stemming the degradation of our natural environment, this should constitute sufficient reason to take action. It follows that for each of us, as individuals who interact with the environment or biophysical envelope, we may ask, "What kind of environment do I want to enable?". We can think of the life forms that populate our environment as our concern, or we can think of ourselves as separate from, and external to, that world of other living beings. Our respective stance defines our identity.

To suppose that we are external to that world is a kind of declaration of *alienation* or separation. To think of that world of living beings as our concern, in contrast, is a declaration that we also have a home *within* nature²⁸. As such, personal reflection on environmental ethics, and to take seriously our responsibilities with regard to the natural environment is the expression of who we want to be during our own short life spans on Earth.

KEYWORDS Anthropocentrism. Gaia. Utilitarianism

ABSTRACT The natural environment is the context in which a great variety of living beings, including those of our own species, have their home. Consequently, it is relevant to consider how our attitudes and actions affect the physical and biological 'envelope' in which life takes place. For this reason the study of ethics in the life sciences must include consideration of environmental ethics. I begin by situating the meaning of ethics and environmental ethics in relation to real-life moral practice. Next, I discuss the various ways in which personal responsibility for one's impact on the natural environment may come about. After this, I provide an overview of three sorts of critical perspectives regarding our behaviour regarding the natural environment. Ultimately I claim that taking personal responsibility for the integrity of the natural environment has an important role for our self-identity, as well as for the flourishing of nature.

NOTES

1. By 'integrity of the natural environment' I mean the condition of the environment that allows for its normal functioning as

- the site for the flourishing of various species of living beings, commonly found there unless human interventions have impeded their presence. By 'environmental degradation' I mean the processes that diminish the integrity of the natural environment, as well as the resulting condition.
2. Although the terms ethics and morality usually are used interchangeably today, I propose to primarily use the term 'ethics' for *reflection* on the correctness of attitudes concerning, and actions affecting, significant others, reserving 'morality' for the set of attitudes and actions themselves, insofar as they may be subject to praise or censure and may characterise a person's character.
 3. The point of view on ethics developed here is indebted to Mary Midgley's "Duties Concerning Islands" in Donald VanDeVeer and Christine Pierce, *People, Penguins and Plastic Trees* (Wadsworth, first edition, 1986), 156-64, and Val Plumwood's "Nature, Self and Gender: Feminism, Environmental Philosophy, and the Critique of Rationalism" in Christine Pierce and Donald VanDeVeer (eds.), *People, Penguins and Plastic Trees* (Wadsworth, second edition, 1995), 197-213. It is to be noted that we cannot derive values from facts. Our experience, however, is *not* neatly divided into values and facts. Our experience, which is heavily dependent on the modes of knowing and valuing peculiar to our culture, rather acquaints us with the world in value-laden ways. We may, of course, on reflection, critique the values that we initially were caught up in; this is how we rid ourselves of problematic prejudices. But we may also, on reflection, come to the conclusion that we need to deepen our commitment to certain of our value configurations. That is what I call the development of a 'sense of responsibility.'
 4. There are beings, of course, with whom we have both morally significant *and* instrumental relationships, as in the case of one's spouse who is also one's business partner. To speak of a morally significant being is equivalent to speaking of a being with 'moral standing'; this latter term, and the criteria for attributing moral standing to some being, are discussed at some length by Christine Pierce and Donald VanDeVeer in their second edition of *People, Penguins and Plastic Trees*, pp. 6-14; they propose that "[some being] has moral standing if and only if the existence of [that being] or its interests in well-being have positive moral weight." (p. 7) Another way making reference to beings that are morally significant is to speak of beings that are morally considerable. See, e.g., Robert Elliot, "Environmental Ethics" in Peter Singer (ed.) *A Companion to Ethics* (Oxford: Blackwell, 1997), 284-93.
 5. Notably, Kant repeatedly praises common moral reason. See Immanuel Kant, *Foundations of the Metaphysics of Morals*, translated by Lewis White Beck (Bobbs-Merrill, 1959).
 6. It is to be noted that I do not claim that ethics is a merely descriptive matter. What I am proposing, rather, is that when ethics concerns itself, among other things, with normative relations its intended aim is the systematisation and deepening of our understanding of the prescriptive claims of common morality. This does not mean that upon reflection we cannot reject the norms of common morality. The idea is simply that ethics, if it has to go beyond abstractions, will have a link with the norms that guide us at the pre-philosophical stage.
 7. For a summary discussion see, e.g., "The Idea of a Social Contract" in James Rachels, *The Elements of Moral Philosophy* (Random House, 1999), 143-61.
 8. For a summary account of the significance of utilitarianism for our treatment of non-human animals see Rachels, "The Utilitarian Approach" in his *Elements*, 96-106.
 9. On the use of non-human animals in our society and the moral problems that this poses see, e.g., Peter Singer, *Animal Liberation* (Random House, second edition, 1990).
 10. On reverence for life see Albert Schweitzer, *Civilization and Ethics* (London: A.&C. Black, 1946). On living things as teleological centres of life see Paul Taylor, "The Ethics of Respect for Nature" and also John Rodman, "Ecological Sensibility," both in VanDeVeer and Pierce, first edition, 169-84 and 165-68, respectively.
 11. See Aldo Leopold, "The Land Ethic" in Pierce and VanDeVeer, second edition, 142-51, reprinted from Aldo Leopold, *Sand County Almanac* (Oxford University Press, 1981).
 12. See Holmes Rolston III, "Duties to Endangered Species" in Pierce and VanDeVeer, second edition, 314-25.
 13. See James Lovelock, *The Ages of Gaia* (New York: Norton, 1988).
 14. It is a matter of some complexity whether one can, and how one is to, avoid cultural bias, especially in ethics. I propose that, insofar as *our* notion of ethics has its roots in the European tradition, we should acknowledge its *prima facie* cultural specificity, which means that it is a contingent matter whether the idea of ethics, or any particular ethical conviction, has counterparts in other cultures. For a summary of ways to justify an environmental ethic see Elliot in Singer.
 15. See William T. Blackstone, "Ethics and Ecology" in William T. Blackstone (ed.), *Philosophy and Environmental Crisis* (Athens, Georgia: University of Georgia Press, 1974).
 16. Notably, we are talking of a *moral* right and not of a legal right. Legal rights may constitute important ways of ensuring decent treatment of certain beings, but are independent of moral rights. For an interesting argument in support of legal rights for non-human parts of nature see Christopher D. Stone, "Should Trees Have Standing? – Toward Legal Rights for Natural Objects" in Pierce and VanDeVeer, second edition, 113-25.
 17. The export of toxic materials to impoverished areas inhabited by racial minorities also poses issues of environmental racism; see, e.g., Karl Grossman, "Environmental Racism" in Pierce and VanDeVeer, second edition, 39-44.
 18. For an introductory review of the debate see, e.g., Joseph R. Des Jardins, "Ethics, Energy, and Future Generations" in Joseph R. Des Jardins, *Environmental Ethics* (Wadsworth, 1993), 69-98.
 19. Emphasis added; The World Commission on Environment and Development, *Our Common Future* (Oxford University Press, 1990), p. 8.
 20. Besides its justification through various forms of anthropocentric ethics, the idea of stewardship for future generations also receives backing from diverse forms of religious ethics that demand conscientiously good management of the Earth because of our duty to a higher being.
 21. For a summary defence of the importance of internalising private costs of production see, e.g., Manuel G. Velasquez, *Business Ethics: Concepts and Cases* (Prentice Hall, 2002), 238-41.
 22. This is Karen Warren's way of summarising the ecofeminist critique. See her "The Power and Promise of Ecological Feminism" in Pierce and VanDeVeer, second edition, 213-27.
 23. On social ecology see, e.g., Murray Bookchin, "Remaking Society: Pathways to a Green Future" in Pierce and VanDeVeer, second edition, 227-33.

24. See Herbert Marcuse, *One-Dimensional Man* (Boston: Beacon Press, 1991) and *Eros and Civilization* (Boston: Beacon Press, 1955).
25. For further work on the 'rationality' and politics built 'into' technology see, e.g., Albert Borgmann, *Technology and the Character of Contemporary Life: A Philosophical Inquiry* (University of Chicago Press, 1984); and Langdon Winner, *Autonomous Technology: Techniques-out-of-control as a Theme in Political Thought* (Cambridge: MIT Press, 1986). Regarding the politics of "formal technologies" see Susan Leigh Star, "Layered Space, formal representations and long-distance Control: the politics of information," *Fundamenta Scientiae*, Vol. 10, No. 2 (1989), 125-54.
26. See Arne Naess, for example, "Self Realization: An Ecological Approach to Being in the World" in Pierce and VanDeVeer, second edition, 192-97. There are a number of other proposals aimed at creating the conditions for re-thinking our place in the greater environment. Some appeal to the example provided by various Native and traditional cultures. Others, like Anthony Weston's "Enabling Environmental Practice" in Pierce and VanDeVeer, second edition, 463-69, propose that we begin by becoming acquainted through a new "environmental practice," with our natural surrounds.
27. See Val Plumwood. She also critiques deep ecology for the alleged failure to perform the necessary historical analysis of its conceptual baggage. Notably, a number of critiques of the contemporary discourse on nature have also issued from writers influenced by postmodernist and poststructuralist perspectives. See, e.g., Jane Bennett and William Chaloupka (eds.), *In the Nature of Things* (University of Minnesota Press, 1993).
28. On the idea of being at home in nature see, e.g., Don McKay, "Baler Twine: Thoughts on ravens, home, and nature poetry" in Tim Lilburn (ed.), *Poetry and Knowing: Speculative Essays and Interviews* (Kingston, Ont.: Quarry Press, 1995), 17-28. Also see Wendell Berry, *Home Economics* (San Francisco: North Point Press, 1987).

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