

Dermot Moran

"Towards a Philosophy
of the Environment"

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Educating for Environmental Awareness

Edited by
John Feehan

Foreword by
Frank Convery

**University College Dublin
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TOWARDS A PHILOSOPHY OF THE ENVIRONMENT

Dermot Moran

Department of Philosophy
University College Dublin

Introduction

To what extent should consideration of the natural environment feature in our philosophical concerns and moral deliberations? Environmental issues don't just supply a new domain in which philosophers can ply their traditional trade: they actually challenge the very basis of traditional philosophy and specifically *moral* philosophy (ethics) in significant ways. Furthermore, environmental problems address not just the scientific community but call all humans to account; our deepest intuitions are challenged and indeed our very survival is at stake. Arne Naess, a pioneer of the environmental movement and a professional philosopher by training, distinguishes between *ecosophy* and *ecology*; for Naess (1990, p.87), *ecology* is the scientific response to issues and problems, whereas *ecosophy* is a normative discipline, concerned with values and requiring wisdom in relation to the balance between humans and nature. Arne Naess defines *ecosophy* as 'a philosophy of ecological harmony or equilibrium' (Naess, 1973, p. 99). In this essay I am concerned with *ecophilosophy* or *ecosophy* and not with conservationism or ecology. *Ecosophy* or *ecophilosophy* (the terminology is fluid) is called on to provide - in the manner of traditional metaphysics - an overarching global framework (*Weltanschauung* - 'world view') wherein humans can situate themselves with respect to the natural order. In a more restricted setting, *environmental ethics* is called on to provide moral norms or intuitions which can stand what has been called the 'courtroom' test, that is, to provide *publicly defensible justifications of approaches to nature, based on recognisable and acceptable moral norms*. Ecophilosophy can be seen as a more general, broadly-based discipline which provides an overall theoretical framework whereas *environmental ethics* is the specific application of environmental theory to human behaviour generally.

The developing field of ecophilosophy is one of large-scale theoretical disagreement and debate. Nonetheless, all participants would agree that this area of philosophy carries an urgency which cannot be ignored. More and more university departments of philosophy are devising courses in environmental ethics and ecophilosophy. Needless to say, the development of a sound *ecosophy* or *ecophilosophy* will be a remarkably difficult and challenging task, ringed around with many historical and cultural limitations. Here I would like to outline some of the difficulties and challenges facing us in developing a sound approach to the environment.

The environmental challenge

No one reflecting on questions concerning the quality and sustainability of human life in our world can ignore the harsh facts of environmental degradation and resource scarcity, with the extinction of entire species due to the destruction of their habitats. Increasing air pollution, ozone damage, climate change, water scarcity, degradation of the human environment, desertification, deforestation, accumulation of toxic waste, the accumulation of pesticides in the food chain, the dangers of genetic engineering, the risks associated with intensive farming, are among the environmental problems and catastrophes, both on the local and global scale, which have forced themselves centre-stage in the considerations of scientists, politicians, planners as well as in the broader community of citizens.

Do we owe a duty to future generations? Are we morally obliged to hand on to our as-yet-unborn successors a world fit for living in? Do we have a moral duty of care towards animals, and if so, what grounds that duty? Or, do animals have *rights*, and if so, how are we to draw the boundaries of the animal domain? If we agree that we owe a duty of care to animals, do we also, by parity of reasoning, owe a duty of care to plants and other life forms? Going further, should we include non-living natural forms, such as mountains or lakes as units or moral concern? How are we called on to relate to a world where scarcity and diminishing resources threaten established patterns of life (including human life)? Regarding the population explosion, we have to realistically assess what is the carrying capacity of spaceship earth, raising problems of almost unimaginable scope and difficulty. Are we morally obliged to preserve certain species from extinction? If we are so obliged, is the obligation to preserve some token examples of the species or *all* individuals within the species? In other words, are our responsibilities directed towards individuals only or also to whole systems, or perhaps primarily to whole systems only? With regard to the environment, as in all other areas of moral concern, the question arises: how we are to balance our responsibilities towards individuals with our concern for the totality?

I have just listed some of the pressing, challenging questions which a *philosophy of the environment* is called on to address. These are urgent questions addressed to *this* generation, they concern how we ought to act *now*. How should the philosopher respond? Indeed, given the diversity of philosophical positions, will we ever be able to produce a coherent response? Let us now look at some general directions environmental philosophy might take and some major dilemmas it must face.

Our increasingly technological and technocratic society is responsible for many of our environmental problems, and at the same time has generated some attempts at solution. In response to various pressing problems, new ecological sciences and environmental management systems have emerged, producing new strategies,

often highly technological and technocratic (as in nuclear waste disposal). However, the scientists and managers who are implementing these strategies do not often notice that these new environmental management strategies presume a set of normative notions, such as *conservation*, *viability* (e.g. minimum viable population of elephants), *sustainability*, *balanced development*, which have not themselves been adequately subjected to critical scrutiny. Scientists and planners are often not concerned with sorting out the morality of what they do, or they assume that someone else is doing it; they just want to get on with the job on hand. (This is very obvious in the case of new medical technologies, e.g. freezing human embryos for later implantation, where the scientists themselves are calling for someone else - usually politicians - to make decisions on the ethical aspect of the implementation of these technologies). In many cases, furthermore, the scientific strategies have emerged in a piece-meal, local fashion and have not been considered holistically in relation to all aspects of the problem. For example, it may in fact be the case that a strategy which has a local good effect can carry profound ill effects for others, e.g. the creation of wildlife parks in Africa and India has often been at the expense of the habitats and livelihoods of the indigenous people, whose *living* environment is often sacrificed in the name of eco-tourism.

Unquestionably, technological and pragmatic strategies for addressing environmental demands are ringed around by many limiting factors, such as the *political* requirement that economic growth be sustained and encouraged, or that all strategies must be broadly acceptable to dominant local interests or cultural or political pressures, or perhaps to rather limited cost-benefit analyses (e.g. in the case of the justification of nuclear power). Witness the British Government's reaction to European Community demands for a cull of cattle in order to reduce the threat of BSE and human CJD; or the Norwegian Government's reaction to threats to its whale fishing industry. Or even, on the opposite side of the fence, consider the criticisms directed at Greenpeace for preventing Shell disposing of a redundant oil-drilling platform at sea, where Greenpeace was accused of exaggerating the technological damage - in effect, getting its science wrong. Both sides are prone to operate with fairly limited examination of their own presuppositions and within a predominantly technocratic outlook. Environmentalists often feel that local technological responses to problems, managed by political interests, may not go very far in addressing genuine environmental problems, and they may be somewhat suspicious of scientific, technologically-based environmental science. They are seeking the kind of critique which philosophers bring to bear on issues - clarifying the issues, highlighting the hidden assumptions and operative values, proposing new imaginative revisions of the situation and so on.

Environmental philosophy, then, must go beyond the more narrowly defined

conservationism or even conservation *ethics*, since these may be too rooted in prevailing economic values and political constraints, and may never question basic assumptions. Even in developed countries with well developed environmental practices in place, it is increasingly clear that some broader philosophical principles need to be considered which would attempt to integrate various considerations in different areas into an overall outlook. A *philosophy of the environment - ecophilosophy* - is called for, a form of critical thinking which goes beyond strategic responses to what are often crisis situations, and aims at generating long-term ways of thinking about the environment, integrating the environment into our broader philosophical concerns about living well (ethics), about the nature of reality (ontology) and so on.

The origins of environmental attitudes

As a new discipline ecosophy has to discover its own tradition, as it were. Thus, an important dimension of any philosophy of the environment involves writing the history and pre-history of that movement itself. This is important because so many forms of argument in moral, cultural, political and religious matters make appeal to *history* to supply a certain kind of justification for positions taken. Thus, for example, history is crucial to political claims regarding Northern Ireland. Similarly many justifications for a particular way of treating people or animals or the broader natural environment take the form of 'it says so in the Bible (or Koran)...'. In order to deal effectively - and I do not mean dismissively - with these kinds of arguments in environmental matters, it is necessary to have a reasonably informed grasp of the history of Western approaches to the environment, which are often very complex and need to be studied in detail. But it is not an exaggeration to say that the theory of the relation of the environment to the human world traditionally has largely been determined by the outlook of the dominant religions, specifically Judaism/Christianity/Islam (themselves drawing on the Hellenic tradition). Outside of the practices of a few saints, such as St Francis of Assisi (saints who themselves were and still are often treated as idiosyncratic and atypical), it has been persuasively argued by those interested in this history that Hellenism/Christianity has never had a particularly strong place for the value of the given natural order due to its emphasis on the uniqueness of man who is essentially placed outside the natural order (see Passmore, 1980). Some environmental philosophers (e.g. Attfield, 1983), have however argued that the traditional theology has just been blind to the environmentally concerned implications of the Bible and New Testament. The devaluation of the natural order was traditionally justified by a certain interpretation of Biblical texts, specifically Genesis, claiming to show that man was lord and master of nature, having 'dominion' over the animals, commanded to 'subdue the earth'. In matters concerning morality or salvation, the world just did not count. Of course, recently

a number of theologians, including Sean McDonagh, have argued that Biblical texts support a much richer theological interpretation of 'dominion', involving stewardship and care for nature. Biblical stories like that of Noah and his ark attest to concern for the survival of animals in situations of natural catastrophe and wholesale destruction of the environment. But it remains the case that these richer readings of Scripture have in fact been prompted by the challenges of the environmental movement rather than having emerged in their own right within traditional theology. No one could claim that the environmentally-friendly reading of these texts is actually the standard reading (Attfield, 1983, pp. 34-50). More often than not, it has been the crusading of the environmental movement which has called forth a theological response, with theologians being faced with the task of defending their tradition with an adequate response (as in the parallel case of the feminist challenge).

But one must go beyond even theological interpretations of the texts of western religion in seeking a basis for environmental concerns. As Hugh LaFollette and Niall Shanks (1996) put it: '... no sober-minded researcher would be willing to settle important questions of science and public policy by appealing to religious beliefs which many people deny and no one can establish scientifically' (LaFollette and Shanks, 1996, pp. 51-52). Environmental *theology* is welcome, but it cannot substitute for *ecophilosophy*.

As Passmore (1980) persuasively argues, Western thinking about the nature of the world and about the place of humans in that world has its origins in ancient Greek philosophy. Platonism in its various forms has always been deeply suspicious of anything lodged in the temporal domain and demoted consideration of the natural order to a preoccupation with shifting appearances rather than timeless truths. This Platonic view, taken up by Christianity and by Manicheism led to a deep suspicion of the material, temporal world as possibly even a source of evil. Christian philosophers of the Patristic period followed Plato in emphasising the need to in some way *transcend* the natural and the temporal, to invoke a God beyond the world and a destiny for humans outside of the sphere of material change and decay. St Augustine typifies this disinterest in the transitory domain of earthly creatures. In his dialogue, *Soliloquies*, when asked by Lady Philosophy what does he wish to know, the author answers 'God and the soul. Nothing more'. Nature, creation, the laws of the physical world, the biosphere, none of that matters to the philosopher whose eyes are fixed beyond the world. The goal of Augustinian Christianity - as for most of the world-denying philosophies of late antiquity - was to free the soul of the constraints of time, matter and the body.

It would be a huge task, entirely outside the scope of this paper, to sketch the variety of approaches to nature in the medieval, modern and contemporary periods. Suffice to say that the first demand for philosophy to respond adequately

to the ethical challenges of the environment emerged with the Enlightenment and in particular in defence of the notion that animals have feelings and suffer pain, which had been denied by mechanists such as Descartes (1596-1650). A number of texts defending the emotional lives of animals began to appear in the seventeenth century. The Utilitarians - especially Jeremy Bentham (1748-1832) - raised the status of animals further, by asserting that due to their being able to feel pleasure and pain, animals must be counted in the calculus of pleasure and pain which was to form the basis of Utilitarian moral decision. Indeed, the first real battle ground for environmental philosophy was the issue of the rights and entitlements of animals.

The moral treatment of animals

Just as Greek and medieval philosophy exhibited blind spots about the role of slaves and of women, so too the emerging philosophies of Western culture carried with them a rigid dichotomy between the human and the natural order. In particular, the dominant moral position was - and remains to this day - the view that morality is a matter of the regulation of conduct between humans, that no moral rules govern the relations between the human and the non-human. (For a modern defence of this view see Carruthers, 1992). Thus, even a Christian theist such as Thomas Aquinas maintains that there is absolutely nothing preventing or restraining a human from acting in any way whatsoever towards an animal. Cruelty towards animals in itself had no moral significance for St Thomas:

Through these considerations we refute the error of those who claim that it is a sin for man to kill brute animals. For animals are ordered to man's use in the natural course of things, according to divine providence. Consequently, man uses them without any injustice, either by killing them or by employing them in any other way. For this reason, God said to Noe: 'As the green herbs, I have delivered all flesh to you' (Gen. 9:3).

Indeed, if any statements are found in Sacred Scripture prohibiting the commission of an act of cruelty against brute animals, for instance, that one should not kill a bird accompanied by her young (Deut. 22:6), this is said either to turn the mind of man away from cruelty which might be used on other men; or because an injurious act committed on animals may lead to a temporal loss for some man, either for the agent or for another man; or there may be another interpretation of the text, as the Apostle (I Cor. 9:9) explains it, in terms of 'not muzzling the ox that treadeth the corn' (Deut. 25:4).

Aquinas, *Summa Contra Gentiles*, Book III, Part II, Chap. 112, 12-13.

In this striking passage St Thomas employs Biblical justification in the typical way

to which we have already drawn attention. Furthermore, his argument is entirely *anthropocentric*, if we are to refrain from torturing and abusing animals, it is not on account of the animals themselves but for the reason that such behaviour can have an indirect effect of *humans*. By carrying on in this manner we may gradually brutalise ourselves and thus commit acts against morally significant human beings. But aside from the argument that the ill-treatment of animals is inadvisable because it may lead to deleterious effects on human conduct, Thomas is clear that there is nothing intrinsically wrong with mistreating animals. Animals are not *morally significant* for Thomas. They just don't count. Aquinas's view that animals did not need to be considered in this regard encapsulates the standard position in Western thought but the emerging new sciences placed it in an even starker framework.

In the seventeenth century, Descartes sought to establish an intellectual framework for the new sciences. He asserted in his *Discourse on Method* (1637) that humans through these sciences could become 'masters and possessors of nature'. Humans are, for Descartes, connected with nature through the body, which is essentially a machine, obeying the laws of physics and mechanics. Descartes allowed that human souls somehow escaped from the rigid order by being outside the sphere of matter altogether. Animals, on the contrary, were just machines. Descartes's follower, Nicholas Malebranche, a Catholic priest, notoriously claimed that to kick a sheep was simply to kick a machine; the scream of pain it uttered was not pain but simply the noise caused by the release of air from the lungs - like squeezing a bellows:

Thus in animals there is neither intelligence nor souls as ordinarily meant. They eat without pleasure, cry without pain, grow without knowing it, they desire nothing, fear nothing, know nothing; and if they act in a manner which demonstrates intelligence, it is because God, having made them in order to preserve them, made their bodies in such a way that they mechanically avoid what is capable of destroying them.

Search After Truth, 6.2.7, pp. 494-5.

Even the greatest moral philosopher of the eighteenth century, Immanuel Kant, saw nothing intrinsically wrong with mistreating animals and directly repeats St. Thomas's view:

So far as animals are concerned, we have no direct duties ... Our duties to animals are merely indirect duties to mankind.

'Duties to Animals and Spirits', *Lectures on Ethics*, pp. 239-41.

As this cursory survey suggests, with the rise of empirical science the modern world emerged within the framework of an extremely limited, indeed impoverished, moral outlook with regard to animals and to living things generally.

Traditionally, as we have seen, morality was restricted only to human beings. Nothing else needed to be considered. Utilitarianism, the movement associated with Jeremy Bentham and John Stuart Mill, opened up the possibility of the moral consideration of animals by making it a criterion of the evaluation of a moral action that the pleasure it produced outweigh the pain in the long run. That is to say, Utilitarians thought that actions could be set against each other in terms of the amount of pleasure or pain they generated. In this calculation, not just human pleasure and pain counted, and indeed restricting the assessment of pleasure and pain to human beings only is surely a form of moral blindness, a *speciesism* (the term was coined by Richard Ryder and popularised by Peter Singer, 1976) akin to racism or sexism. An arbitrary evaluation which places one species over another is surely unjustifiable (but of course defenders of speciesism argue that they are not *arbitrarily* assuming one species has priority over another, but doing so on the basis of good reasons). In the long run it may be that choices have to be made in evaluation of species but these cannot be arbitrary: reasons and values for such an evaluation must be put forward. Utilitarianism then seems to offer more hope for the just treatment of animals and sentient beings than more classic humanist approaches. Bentham in particular argued that *moral considerability* should not rest on possession of *reason* or ability to articulate oneself in language: rather it should rest on the capacity to *suffer*. Bentham famously announced: The question is not, Can they *reason*? nor can they *talk*? but, Can they *suffer*? (*Introduction to the Principles of Morals and Legislation* (1789), chapter XVII).

According to Utilitarianism we are morally required to maximise happiness and minimise suffering. It is wrong to cause suffering to achieve a good that does not outweigh that suffering. Peter Singer is a contemporary utilitarian defender of the moral considerability of animals. Singer is seeking *equality of consideration*, which, he emphasises, does not necessarily entail equality of treatment. We have a duty to minimise pain and this ought to lead to our banning certain kinds of animal experiments, farming practices and so on.

According to these philosophers, *sentience* is what is morally considerable in these discussions. Any creature which has feeling, which can feel pain or pleasure, must have its interests considered in any moral debate. This probably rules out microbes such as bacteria but not molluscs or insects. This strategy enables a classic Utilitarian to weight up the benefits versus deficits of flooding a valley not just by ascertaining the effects on the human community but considering the problems caused to the sentient community inhabiting the valley - a very broad spectrum of creatures from protists to mammals and trees. In other words, not just humans have interests. Animals such as insects and plants all have interests, and their interests must be taken into account in any moral evaluation of a situation. This approach has been adopted by the Australian philosopher

Peter Singer whose book *Animal Liberation* (1976) can perhaps be seen as marking the beginning of a new wave of ethical argumentation regarding animals and the environment among analytical moral philosophers who appeal either to utilitarianism or contractarianism as the underlying theories justifying moral imperatives. Singer's approach develops Bentham's premise that any creature capable of feeling pain or pleasure has an interest in promoting pleasure and avoiding pain, and this ought to lead us to practices which minimise suffering. All sentient beings become morally considerable in this view, though clearly all are not necessarily *equally* considerable.

Other contemporary philosophers such as Tom Regan do not accept the utilitarian basis of Singer's argument but do accept that causing pain is morally wrong. Regan agrees with Singer that all pain is pain, rejecting the view that human pain is somehow higher than animal pain. But Regan also rejects the notion that a thing's value lies in its use for another. Rather he holds to the view that living things have intrinsic value - a view commonly espoused in moral theories with regard to individual human beings. Regan (1983) defends the moral treatment of animals by appealing to the notion that animals (at least mammals) do have *rights*. This approach assumes that humans have certain inalienable rights, as are recognised in the US Constitution, in the UN Charter, Human Rights declarations and so on. Put baldly, the argument is: animals have rights, if humans do. This rights based approach sees the central issue of environmental philosophy as justifying the *extension of rights* traditionally accorded to humans in a just society to animals and even non-living things.

In contrast, Peter Carruthers (1992) defends the traditional view denying animals moral status and in particular denying Regan's claim that animals have rights. Carruthers claims controversially that animals are not conscious and do not have conscious mental states; he concedes they have mental states, but not *conscious* mental states - the distinction is controversial - and hence (in this regard echoing Malebranche) no fears or desires. Carruthers argues for a kind of *contractualist theory of morality*, based on implicit mutually beneficial agreements which can only be contracted between conscious rational beings. But one obvious drawback of contractualism is that it seems to rule out the moral rights of non-rational beings such as infants or the mentally incapacitated or senile, since they are incapable of being moral agents and effecting contracts. They cannot bind themselves to an agreement. Contractualist accounts of moral rules may be too narrow to reflect our actual moral practices. If we routinely accord moral status to non-conscious humans, why then should possession of consciousness be a requirement for moral considerability?

From animal rights to a duty of care for Nature as a whole

Many environmental philosophers don't want to get bogged down in the argument over animal rights, or in the question of weighing up pains and gains, or in the question of identifying interests. They feel this approach is wrong-headed in that it treats the whole of environmental philosophy as a set of narrow moral calculations rather than as respecting a context which we inhabit. There has been a gradual move in environmental thinking away from the narrow focus of the treatment of animals towards a broader consideration of nature as a whole. Some environmental theorists want to introduce us to new ways of considering our insertion into the natural order; sometimes the imperative is simply to preserve beauty or simply to minimise interference in natural processes or to have respect for all creation. We may be required to respect not only sentient beings but also *classes* of things, for example species (which are abstract classifications), or even natural inanimate entities, e.g. rock-formations, mountains, rivers. We need to have compelling reasons for levelling a hill, strip-mining, changing the course of a river and so on. Here what needs to be considered in a moral evaluation may be not just the *living* dimension of the ecosystem, (tree frogs, crested newts, spotted owls, sea trout, or whatever) but its *inanimate* dimensions.

One important view holds that the core issue of environmental ethics is the justification of the *enlarging of the moral community*. As Holmes Rolston III puts it: 'the challenge of environmental ethics is a principled attempt to redefine the boundaries of ethical obligation' (in Cooper and Palmer, 1992, p. 135). For Aldo Leopold such a view is intrinsic to his 'land ethic' but it can also be reached by a quite different set of arguments, to the effect that environmental ethics is a consequence of a broadening of the sphere of moral consideration and a sharpening of awareness of the creature suffering. In other words, an ethics which considers the living and non-living world forms part of a gradual but inexorable broadening of the categories of what deserves moral consideration and respect, akin to the gradual growth in awareness of the immorality of slavery, or discrimination against women, or of duties towards children. On this view, environmental ethics simply attaches itself to traditional ethics but represents a sharpening of focus about the nature of moral responsibilities for others, perhaps in terms of the identification and vindication of rights or interests. This claim has been ridiculed (see David Cooper's own essay in Cooper and Palmer, 1992; and also Carruthers, 1992) by those who feel that crossing species bounds is so strongly counterintuitive as not to merit serious consideration, but nevertheless I believe that, at the very least, it provides a correct phenomenological description of the manner in which concerned individuals arrive at moral growth and maturity in their own thinking. In other words, moral deliberation itself operates on the 'like treatment for like instances' maxim, and so moral agents themselves do feel

themselves called on to extend parity of treatment when they arrive at a recognition of the similarity. In this case, I don't think we can afford to ignore the *emerging moral phenomenon of the extension of the moral community* (currently advocated by animal rights, ethical treatment of animals, or animal liberation movements). We should be aware also that there is a great diversity of views even among those who agree on the extension of rights from the human to other living spheres.

Several of these holistic schools of environmental thinking are so radical and comprehensive that the mere extension of moral considerability to other forms of life is not regarded as sufficient. There is another radical claim (advanced by Arne Naess, Aldo Leopold and J. Baird Callicott) that individual organisms, whether individual human beings or animals - the traditional moral agents and focal points of moral consideration - are to be displaced in true environmental philosophy through primary consideration being given to the *biotic community* or *biotic system* (however that may be defined and delimited). As Holmes Rolston III claims: 'The ecosystem is the community of life; in it flora and fauna, the species, have interests and destinies'. Leopold (in *A Sand County Almanac*) expresses recognition of the '*biotic community*' in his famous moral precept:

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise (Leopold, 1949, pp. 224-5).

Callicott (1980) even argues that concern for animals (or humans) is in fact *incompatible* with a true deep moral concern for ecosystems or biotic communities. According to this view, focusing on animal rights is only a sectional interest, akin to focusing on human rights to the exclusion of the natural world. The true moral focus for genuine environmentalists must be the *biotic community* as a whole. This approach harbours tremendous difficulties, not least because the notion of a biotic community is not easily definable, and both the complexity of organic life forms and the mutual antagonisms of competing organisms within this complexity suggests that the term 'biotic community' is idealistic. I would argue, however, that neither current metaphysics nor current science nor good philosophy of science, warrant the prioritising of ecosystems on some kind of reading of the state of nature. There are no ecosystems immune from human interaction, there is no pure state of nature. But this does not mean that there are no moral duties to ecosystems, although it is clear that we need principles both for the identification of ecosystems and their hierarchical ranking in terms of their claims on our consideration. Perhaps what is most important is to recognise that we ourselves belong and flourish within an ecosystem and concerns for human flourishing cannot neglect that enabling and fulfilling environment in its manifold aspects.

Let us now look at what may be termed the 'replacement' position - namely the view outlined above that environmental philosophy displaces humans and refocuses moral concern on the ecosystem or the 'biotic community'. Let us first explore the background to the view that the primary unity of analysis in ecology is the *system*, not the individual.

The notion of an ecosystem

Consideration of the environment as an *ecosystem* where all kinds of living and non-living systems intermesh to achieve some level of stability is a product of fairly recent biology. The precise definition of an *ecosystem* is controversial. As Lawrence E. Johnson (1991, p. 227) points out, the decaying body of a mouse is an ecosystem; indeed we destroy thriving ecosystems whenever we scrub the bathroom floor. This emphasis on system and unity in nature has been seen as having profound consequences for moral deliberation. An argument has been made that the *unit* of environmental thinking is the *system* not the individual, and this requires a reconsideration of traditional moral values/duties which have normally attached to individuals. According to the proponents of this holistic philosophy of ecosystems, the systemic values to be sought and supported are those of *integrity, stability and harmony*, although there is considerable argument about how such values are to be defined.

Seeing a pond or a forest as an *ecosystem* sustaining a vast variety of life forms at different and closely interconnected levels is a recent development of the life sciences, though one which was presupposed in many older, pre-scientific views of nature. Developments in biology are seen as mirroring developments in physics, which emphasise fundamental fields of force and interchanges of energy as much as individual particles in its account of the nature of reality. Aristotle, who was both a hugely influential metaphysician and also the world's most influential zoologist and marine biologist for almost two thousand years, was primarily interested both in classifying animals into kinds and identifying the structure underlying the material parts. His aim was in part to argue - against his teacher Plato - that the observational study of individual organisms and their integral parts was worthwhile in its own right. Aristotle was combating both the Platonic view which took the natural world to be only partially real (because it was constantly changing and seemed incapable of being fully ordered in a lawful way), and also the established view of Greek medicine which held that only humankind was significant and of a dignity meriting scientific study. Thus Aristotle made a point of defending the study of non-human organisms in his new science:

We must not recoil with childish aversion from the examination of the humbler animals. Every realm of nature is marvellous ...

If any person thinks the examination of the rest of the animal kingdom an unworthy task, he must hold in like esteem the study of man. For no one can look at the primordia of the human frame - blood, flesh, bones, vessels and the like - without much repugnance. Moreover, when any one of the parts or structures, be it what it may, is under discussion, it must not be supposed that it is its material composition to which attention is being directed, but the relation of such part to the total form. Similarly the true object of architecture is not bricks, mortar, or timber, but the house; and so the principal object of natural philosophy is not the material elements, but their composition, and the totality of the form, independently of which they have no existence.

Parts of Animals, Book I (V), 645a (McKeon, 1941, p. 657).

Aristotle was seeking to justify a separate science of the natural realm, a science distinct from physics which studied the material constituents only. He was hugely influential in the identification and classification of species and he was deeply concerned with working out the ontological commitments of his biological discoveries, yet he scarcely ever considered the relationships *between* organisms or their relation together in the totality of the biotic system. Aristotle's biology did recognise the importance of system and structure (form, *morphé*) but only *within* a particular species of organism. Aristotle studied the parts of animals - looking in particular at the function of different organs - and their generation, but he had scant interest in how animals related together in a larger system, and he never asked the question of the 'why' or purpose of the system as a whole, though there are some passages where Aristotle considers interdependence between creatures (e.g. *Parts of Animals*, passage quoted above). He did not extend his inquiry beyond specific creatures to the whole system, perhaps partly because he was opposing the Platonic view, expressed in the *Timaeus*, that the cosmos as a whole was, or at least could best be understood as, a living animal. Biology for Aristotle considered parts (e.g. wings, horns) in their relation to the integrated system of a single organism, but first and foremost biology was interested in organisms as unities. There was nothing in principle preventing Aristotle for asking about the science of those structures which sustain organisms in their interrelationships with other species and their habitat - a science of the *ecosystem*. But in fact, that development had to wait until the twentieth century, and the precise consequences of this new view are still under dispute.

Aristotle's metaphysics prioritised individual *substances*, entities which exist independently in their own right and which are not part of something else. Aristotle's examples of substances are: this man or this horse, entities which essentially stand apart from each other. The priority which Aristotle accorded to these individual organisms - the horse or the human being - as the primary examples of substances was made canonical in Medieval scholastic philosophy,

and the notion of the organism's independence was interpreted in such a way that the organism was considered as 'self-standing', rather than as surviving through the co-operation of all forces, from the pressure of the atmosphere or the intensity of sunlight to those forces exerted on them by other species in the ecosystem. The New Science of the seventeenth century, championed by Descartes, Bacon, Galileo and Boyle, challenged the entrenched scholastic account of individual substantial forms. Descartes' strategy was to argue that *all* physical reality (including all living things and excluding only the human mind) was actually one big extended substance. Matter just simply is extension. Individual entities, for Descartes, might be understood on the analogy with whirlpools or waves in the great unified sea of extended matter. Descartes' field-theory of matter was opposing the revival of ancient Atomism by other seventeenth-century scientists including Newton and his philosophical advocate, John Locke. Indeed - as is instanced by differing accounts of light - the struggle between a wave and a particle account continues into contemporary physics. But modern science, whether Cartesian or Newtonian in inspiration, concentrated on explaining the higher properties of things in terms of their material properties, and the medieval theories of individuation were abandoned. The effect of the triumph of scientific explanation was that metaphysics was no longer the arbiter of what there is, of what actually exists: science claimed to be able to explain the whole realm of nature. Bertrand Russell, for instance, in his *Problems of Philosophy* encouraged us to think that tables and chairs were not really 'real' whereas the arrangement of molecules and particles acting under atomic or subatomic forces were to be considered real. Such a dramatic denial of the common sense world of ordinary items was at odds with Aristotle's account. It also tended to ignore the manner in which living organisms are constituted into coherent entities whose parts function within the form of the whole. Though many recent philosophers have reacted against an excessive scientism in describing the furniture of the world and are willing to allow that our common sense world of objects is just as genuine as the scientific real world of quarks and black holes, the upshot is that ontology is considered to be a product of interests, e.g., gardeners operate with an ontology of welcome 'plants' and unwelcome 'weeds' whereas botany knows no such classification (a weed is merely a plant growing where it is not wanted).

Indeed, biology does not necessarily confirm our common-sense prejudices about what is real in the world. The microscope opened up whole new layers of living entities, previously unknown because unseen. But even where the entities are observable, common-sense appearances are often deceptive regarding the identification of individual living organisms (this tree, this mushroom) as existing in their own right. Thus some American scientists in a letter published in *Nature* (19th November 1992, as reported in Stevens, 1992) nominated a 106-acre stand of genetically identical quaking aspens found growing from a single root

system in Utah as the world's largest organism. These 'trees' are in fact genetically identical, natural clones and perhaps should best be understood as a *single individual organism*. Similarly scientists have discovered a fungus which covers 30 acres in the soil of a forest in Michigan, spawned from a single spore thousands of years ago, and genetically uniform such that it can be considered a single organism. This biological discovery that what appear to be many individuals in fact form one big conglomerate individual again provides an opportunity for philosophers to reconsider their ontology, their account of what there actually is. (For a discussion of the problems of individuation in plants, see White, 1979). The Portuguese Man-of-War is actually a colony of creatures which co-operate together. Much of our thinking about what constitutes an individual organism or system needs to be informed by scientific research.

We should perhaps learn from these debates to be cautious as to what lesson we draw for ontology - for the philosophical assessment of what really exists in the world. Indeed it is probably as wise to avoid the conclusion that the 'real' units of the biotic world are ecosystems as it is to resist the view that tables and chairs are not part of the genuine furniture of the world. This applies not just to the rejection of Aristotelian individualism but also to the attempt to revive the Platonic 'world-soul' account of the universe in the recent Gaia-hypothesis (Lovelock, 1979). There is no straightforward inference from what science studies to the truth of what is in the world in metaphysical terms. Furthermore, there is no direct inference from what is scientifically 'real' to what is morally significant.

It would therefore be quite dangerous to premise environmental philosophy on ontological or metaphysical assumptions about the true nature of reality, specifically those drawn from considerations of the nature of the living system. This is, however, just what Arne Naess has done in his advocacy of '*deep ecology*' which he sees as a normative philosophy consistent with what he believes to be the best scientific decision about the nature of reality. Naess sees some things as essentially defined by their intrinsic relations. The deep ecology movement is defined in terms of its recognition that the whole biosphere is a field of relations. In 1973 Naess enumerated some of the assumptions of the deep ecology platform:

Rejection of the man-in-environment image in favour of *the relational, total-field image*. Organisms as knots in the biospherical net or field of intrinsic relations. An intrinsic relation between two things A and B is such that the relation belongs to the definitions or basic constitutions of A and B, so that without the relation, A and B are no longer the same things. The total field model dissolves not only the man-in-environment concept, but every compact, thing-in-milieu concept—except when talking at a superficial or preliminary level of communication (Naess, 1973, p. 95).

While not all philosophers are willing to go so far as Naess in making the 'biospherical net of field of intrinsic relations' the central ontological entity about which to be concerned and whose interests must be protected, there is no doubt that 'field' or 'system' concepts do challenge traditional ways of thinking about living things. According to Naess, traditional science largely studied the individual trees, animals and humans in isolation. At best the image was, as Naess says, of the human *in the environment* (where the environment simply encircled and happened around humans). Naess is challenging us to see the world as an environment with human beings knotted into it.

One of the advantages of this ecosystem/biosphere approach is that it highlights the need to be concerned about whole habitats, including *inanimate processes* which play a part in the generation and preservation of a biotic community. Not just tigers but their habitats must be preserved. Not just cuddly animals ('charismatic megafauna' as Naess terms them in Glasser, 1996, p. 164) but amoebas too. The problem is that it is very difficult to define the boundaries of an ecosystem. Holmes Rolston III has argued that the criterion for being considered real for an entity at any level is whether it is *causally efficacious on the level below it*. For example cells shape the behaviour of amino acids, organisms shape the behaviour of the heart and lungs, and so on. However notions of higher and lower are entering in here in ways which would need careful consideration. But Rolston is arguing that we can have identifying criteria for real groups at the biological level, a prerequisite for the assignment of consideration to that group or system.

The undoubted initial appeal of Leopold's and Naess's ethical vision is that it seems to put the consideration of the whole ecosystem above the sectional interests of any part of it (specifically the human part). Opponents (e.g. Tom Regan) of the deep ecological view see it as a kind of ecological *totalitarianism* - raising up 'systems' above the true moral and philosophical units (individual human beings) in the manner in which political totalitarianism elevated the state over the individual. As Glasser (1997, p. 173) observes, on utilitarian grounds the preservation of the world of nature could justify the elimination of all human life. There is also the danger that moving to consideration of the whole system can in fact either totally immobilise moral decision making at the local level, or allow the justification of almost anything in the interest of the whole (e.g. tolerating famine on the grounds that it contributes to the good of population regulation). Furthermore, there is a danger of attempting to assess individual behaviour solely in the light of the supposed interests of the whole. Given that the whole itself, from the evolutionary point of view, has no interests and is acting according to blind processes, it is difficult to see what moral imperative could be drawn from the mere notion of an interrelated ecosystem. This presents quite a strong argument against the ecosystem view, because it challenges deep ecology's own

basic assumption, namely, that ecological science determines **what is real**.

Deep ecology is more inspirational than practical, and it has **in fact become a code-word** for all kinds of extravagant views about the environment, **many of which certainly will not quickly generate the 'ordered system of norms which will withstand courtroom challenges'** that many people want from an environmental account (Schrader-Frechette, 1995, p. 622). Deep ecology's appeal to core ecological norms such as '*integrity*' is difficult to specify in succinct terms. Is *integrity* to be defined in terms of protecting *all* species, or in terms of a diversity of species - a level of biodiversity - adequate for the preservation, reproduction and growth of the ecosystem? Is there any sense in which nature itself can be said to be progressing towards *integrity* or *stability*? Aldo Leopold and his followers see humans as somehow assisting nature to perform its own task, or at least not hindering nature in the performance of its tasks. This view leaves itself open to the criticism that perhaps nature is not in fact heading towards stability or the preservation of diversity. Some argue (see for example Dawkins and Dennett on evolution) that the relentless push of nature leads inevitably to the loss of many species, but within a stable, evolving context. Indeed, it seems likely, from evolutionary evidence, that only about one percent of all species are living today, the vast majority of life forms which have emerged on the planet having become extinct. If nature itself is not only co-operating in this massive, rolling extinction of species but actually evolving in and through this kind of extinction, then it is hard to extrapolate a morality of preservation of these species which claims to reflect nature's own way of doing things. But this argument fails for the same reason as the following analogous kind of moral argument: all humans will eventually die, therefore bringing about the death of humans has no moral significance. Because a natural process has a certain terminus is not a justification for humans to assist the organism reaching that conclusion!

Clearly moral consideration is a feature of *human life*, one which is an outgrowth of the *human mode of living* and all natural processes are entangled in our moral outlook in complex ways. Traditionally morality has been located in human agents, though it does not deny the role of groups or systems in creating a moral reality, 'ethical substance' as Hegel calls it. The fact that human beings live in communities and need the support of groups and families has been recognised from ancient times, yet moral philosophy has continued to locate moral responsibility primarily in the individual's choices, deliberations and decisions, though family, community and corporation are also enjoined to behave morally.

The new emphasis that human beings are inextricable from the supporting environment may not in itself be sufficient to challenge the locating of moral responsibility solely in human beings. Even the most radical environmental ethicist locates moral *agency* solely in human beings (only humans *generate* moral action), although they want moral decision making to include reference to

the non-human, to be inclusive of non-human species, and specifically to place the environmentally necessary elements (whether individual plants, insects or other animals, or types or species, or indeed whole habitats) somewhere on the scale accorded to entities deserving of respect. There is an increasing convergence of opinion that humans can represent animals and act in their interests in legal and moral forums. The idea here is that the plant or animal or ecosystem has interests, but being unable to articulate those interests, others can be appointed or elect themselves to defend those interests. Those who scoff at the idea that a plant could have moral standing should simply contemplate the fact that inanimate companies and corporations have standing in law.

Some future directions

Having reviewed some of the complex of issues and of philosophical positions connected with concern for the environment, it is worth considering avenues of fruitful future discussion. There is no doubt that an overly narrow interpretation of the domain of human morality, excluding animals and concern for nature, is being effectively challenged. This can be done by pointing out that even under its current limited description, human morality requires and justifies the protection of children, of the temporarily comatose, the mentally impaired and so on, who are no themselves capable of initiating or partaking in moral action. The best moral theory, while originating in moral agents, and perhaps while recognising humans as the only certain moral agents, will recognise that moral care extends *beyond* human agents in varying degrees to the entire spectrum of living beings and indeed to the care of the non-living planet itself. As Bernard Williams has argued, the critique that traditional ethics is anthropocentric is misguided if it suggests that human concern for others is really only an instance of human self-concern (Williams, 1991). Williams however seems unable to even imagine the case of a human showing concern for a plant and wishing to nurse it back to health; this seems to turn a blind eye on reality. The fact is that humans do exhibit care for their plants in their garden and accord household pets a place of honour, and are sickened by animal cruelty and neglect. Paradoxically this is perhaps more clearly recognised and conceded by those who exploit animals. Factory farms and slaughter houses, for example, are very reluctant to allow camera crews in to film the proceedings. I believe we are moving towards a more widespread acceptance of what has been termed 'biotic egalitarianism' - the view that all living things have intrinsic value. As Naess (1990) put it: 'The flourishing of human and non-human living beings has value in itself'.

Clearly it belongs to our human intuition to extend this moral considerability to other species - just think how appalled people would be if the routine torture of family pets was subject to no moral or legal censure. Equally, there is no doubt

that there is considerable movement towards the inclusion of bio-systems in our moral or legal scrutiny. Equally, there is no doubt that there is considerable movement towards the inclusion of bio-systems into our moral deliberation, though how ecosystems are to be defined and how they are to be included are matters for continuing, complex debate.

One moral principle which I believe is significant for governing environmental behaviour is a variant of the medieval philosophical-mystical principle of 'letting-be'. The fourteenth-century German mystic and Dominican preacher, Meister Eckhart, articulated this notion of *letting-be* in his sermons, and it was taken up by the later Heidegger (who in turn has inspired radical environmental questioning), and may also be understood as coming quite close to the Zen position of non-interference. We could summarise this principle as: let things be, all things in virtue of their being are ends in themselves and initially command respect. This view emphasises the importance of allowing individual entities to flourish, and it also questions whether interference with the natural flourishing of things can be justified except in terms of genuine human need. According to the 'letting things be' principle we should not interfere *without due cause* in any functioning natural ecosystem. In other words, the traditional view has been that we could intervene at will in the natural order and the only constraint was the long term damage which might be done to human interests, by soil erosion for example, or desertification or whatever. On the view I am articulating here, we would have no justification for interfering in the natural order without first considering the fundamental value of just letting things alone. This view is very tough-minded. It is not the view of environmental Luddites with regard to technological or scientific advance, but it does force one to fully think out the consequences before acting. Of course the leave-it-alone principle, often characterised as 'deep ecology', perhaps ignores the fact that the human species is so deeply committed to interference with nature that there is no withdrawing, that nature itself in certain respects now depends for its very survival on the human.

Letting-be is consistent with the demand for long-term assessment of the impact of interference. For example, the State of Nevada is making a sustained effort to stall a group which is attempting to build an under-mountain nuclear waste storage site, by forcing the proponents of this dump to justify in *long-range terms* the effects of their action. In doing so, Nevada is perhaps pointing a finger at the very audacity of those who thought they could embark on the exploitation of nuclear power without consideration of its long-term impact on the environment. One aim of environmental philosophy, then, should be to create a climate of discourse and deliberation which has moved beyond reactive crisis management and short-term solutions to generate a thinking which is oriented towards long-term goals. Clearly humans have involved themselves in long-term planning in

the past: the building of the pyramids took hundreds of years, and planting oak trees is a commitment to the future. It is therefore not unusual to demand that companies and corporations (e.g. nuclear power companies) demonstrate coherent long-term planning which has been scrutinised by those who have to bear the brunt of the decisions made.

So far we have been charting a certain kind of progress in morality, a slow consciousness raising that has been going on at the theoretical level with regard to the relation between the human and the environment. There is an undoubted moral shift taking place which means it is very likely that in the very near future we will see the development of a moral consensus against the eating of animals and a move towards vegetarianism as the moral norm. It would be foolish if farming and other interests were to ignore this as a mere fashion. There is a definite moral impetus at work here, similar to that which led to the abolition or legal prohibition of slavery, or the emancipation of women. The call to treat animals with respect, or better still to leave them alone is a call with considerable moral weight and one unlikely to be reversed in the near future by another moral insight which would restore the status quo.

In the essay, I have only been able to sketch some of the elements which must be considered as factors in the development of an environmental philosophy. On the one hand, there are the metaphysical or ontological claims as to how things in the world are to be counted, what kinds of things there are in nature and how they are individuated. The emphasis on the dependency and intrinsic relation between an organism and its environment has led some environmental philosophers to argue that traditional metaphysics and moral philosophy must be overturned. This I have called the 'replacement' view according to which ecosophy will *replace* traditional moral and metaphysical concepts. We have argued that moral lessons are not easily deduced from the metaphysical framework, and this framework is itself in contention. A sophisticated philosophy of science might be required to referee claims about the ontology of the world, as determined by the sciences. Arguing from science to norms is always a perilous enterprise. A separate argument has been that the *extension* of moral standing from human to non-human beings (including non-living things and even precious artefacts such as the Sistine Chapel) which *ought to be preserved* and protected, in some version of the moral *ought*. This argument can be pursued in various ways. In my view, increasing numbers of individual moral agents are coming to the view that it is *prima facie* immoral to treat animals with cruelty, or more generally, to withhold respect from nature. I think that the correct phenomenology of the moral experience will attest to this move, and there is no evidence that it is just a fad. The problem remains as to which moral theory best grounds moral relationships with animals and the environment. Currently there is no single theory which is generally accepted - but this problem also arises in the

justification of other moral stances e.g. punishment can be justified on grounds of retribution or on utilitarian grounds, but there are arguments to show that the two positions actually contradict one another and cannot be held at the same time: and equally, different moral dilemmas arise under each form of justification. Nevertheless, moral intuition and moral practice continues to demand punishment even though there is dispute as to the theoretical justification of this practice. It seems likely, on this view, that different forms of moral justification will continue to be held by different individuals justifying moral stances towards animals and nature, but it seems to me unlikely that the traditional view that animals have no moral standing will continue to be as widespread as it once was, and it is likely that maturing ecophilosophy will provide much clearer guidelines and support for the consideration of nature in our moral assessments and our day to day outlook and activities.

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