Ecosystem Health: Some Preventive Medicine

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ABSTRACT: Some ecologists, philosophers, and policy analysts believe that ecosystem health can be defined in a rigorous way and employed as a management goal in environmental policy. The idea of ecosystem health may have something to recommend it as part of a rhetorical strategy, but I am dubious about its utility as a technical term in environmental policy. I develop several objections to this latest version of scientism in environmental policy, and conclude that our environmental problems fundamentally involve problems in our institutions of governance, our systems of value, and our ways of knowing. These are the problems that most need to be addressed.

KEYWORDS: Desire, ecosystem health, health, objectivity, preference, scientism, subjectivity, values

INTRODUCTION

In recent years the language of health and disease has often been employed in discussions of environmental quality. Many people in everyday life find it natural to speak of environments as healthy or diseased. A Southern California mesa, formerly populated by interesting and subtle forms of life, now bulldozed and covered with tract houses and shopping malls, can strike one as the environmental equivalent of a cancer-wracked body. A highly acidic lake or a beetle-infested forest can strike us in the same way.

Recently the idea of ecosystem health has emerged, not as an admittedly loose idea gleaned from ordinary conversation, but as a fledgling technical term to be deployed in the discourse of environmental science. Some ecologists, philosophers, and policy analysts believe that ecosystem health can be defined in a rigorous way and employed as a management goal in environmental policy.[1]

For reasons that I explain in what follows, I am dubious about the utility of 'ecosystem health' as a technical term. This expression may have something to recommend it as part of a rhetorical strategy, but even here I am suspicious. Environmentalists have all too often been trapped by their own rhetoric, and the

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movement as a whole has suffered from its use of misleading metaphors (e.g. 'greenhouse effect', captive animals as 'ambassadors of the wild').[2] Language is important, and environmentalists need to be clear about what they are asserting.

VALUES AND THE LANGUAGE OF HEALTH

The language of health is value-laden. Unfortunately our common cultural conceptions of value are in many respects quite crude.[3]

We tend to think that reasons, desires and dispositions must be either subjective or objective. Subjective reasons, desires, and dispositions are thought of as rooted in an individual's idiosyncratic states or preferences, and can be explained primarily by facts about the individual in question. What is subjective is person-specific, and therefore in its domain we should expect a great deal of relativity. On this view there is little reason to suppose that subjective reasons, desires, and dispositions will be either systematic or widely-shared. Indeed we should expect them to be piecemeal, fragmented and arbitrary. Objective reasons, desires, and dispositions, on the other hand, are rooted in impersonal facts about the way things are. They are largely determined by the world rather than by people, and we can expect such reasons, desires, and dispositions to be systematic, consistent, and widely-shared. For the world is what we have in common: it is systematic and consistent, and objective reasons should reflect these features of the world.[4]

If a reason, desire, or disposition must be either subjective or objective, each of us has a lot to gain by portraying our states as objective. For if a reason is viewed as objective, then it is more likely to be persuasive to other people than a reason that is viewed as merely subjective. How the world is matters to people, and if we can see the world reflected in someone's reasons, desires, and dispositions, then their states will be of interest to us. If we see someone's reasons, desires, and dispositions as subjective, then they will primarily be of interest only to those of us who care about the person in question. People are less likely to be moved by states that they see as facts about their subjects than by states that they see as primarily about the world.

Our tendency to try to objectify goals and purposes that might otherwise be seen as subjective is an ancient one. The language of health has often been mobilised in these attempts. For example Plato in *The Republic* assimilates his conception of virtue and vice to health and disease. Aristotle and Aquinas were also interested in the conceptual resources of the language of health.

Often when political disagreement is intense one side will characterise the other as 'sick', 'diseased', or 'mentally ill'.[5] Racists and xenophobes often use this language to characterise those they hate. They say that Jews, blacks, or 'foreigners' are diseased or defective, not that they hate them. If racists do admit

that they hate Jews or blacks, they sometimes say that this is an appropriate response to the objective qualities of those whom they hate. Thus the anti-semite may portray his or her racism, not as irrational, unmotivated or ungrounded, but rather as a response to the fact that Jews are a diseased, defective, or decaying form of human life.

In recent years the language of health has also been employed in the service of a range of social policy goals. At various times over the last generation it has been common to speak of 'urban health', the 'sick welfare system', or the 'ailing economy'. The language of health is inviting in these contexts because how I feel is subjective but whether or not I am healthy appears to be objective. Various scientific procedures and instruments are relevant to assessing my health but not to assessing how I feel. Thus, it appears that determining whether or not the economy is healthy, the welfare system sick, or the health care system pathological is a matter of objective investigation of the properties of these institutions rather than a matter of assessing our subjective attitudes towards them. Claims about the health of various social institutions appear to be true or false while our attitudes towards these institutions simply are what they are. How we conceptualise the functioning of these institutions has implications about whether the solutions to various problems primarily involve changing social arrangements or changing people's attitudes towards these social arrangements.

Environmentalists have long been concerned to establish their agenda, not just as a matter of mere subjective preference-satisfaction, but as a matter of realising objective goods. This is part of why environmentalists have long been attracted to science. Science is our great cultural legitimator; it warrants some reasons, desires and dispositions as objective, and dismisses others as subjective. If it can be shown that environmentalist goals are somehow implicit in the deliverances of science, then in our cultural context they will have been shown to be of very great urgency.

In recent years attempts to base environmental goals on science have become increasingly problematical.[6] The search for ecological laws on which to base such goals has proved fruitless. The turn towards ecosystem health is another attempt to objectify our environmental goals by basing them on science, but a softer and in some ways less plausible attempt. Thus far the search for ecological laws has merely been unsuccessful; the search for laws of health seems obviously misguided.

PROBLEM ONE: THE DEOBJECTIFICATION OF HEALTH

The first concern we might have about the language of ecosystem health is suggested by the weakness of generalisations about human health. Because of this weakness the supposed objectivity of human health has a way of slipping away under pressure. Even if the language of ecosystem health were

unproblematical in other respects, we might still wonder about the degree to which it would succeed in objectifying environmental concerns. Generalisations about what constitutes, indicates, or contributes to health are surprisingly local and culture-bound. There are numerous examples of what are considered treatable conditions in one western society (e.g. low blood pressure in Germany) that are considered a sign of health in another (e.g. the US).[7] Even what is considered normal body temperature varies across societies.

Longevity might seem central to conceptions of health, yet it is obvious that people can live long and unhealthy lives, as well as short and healthy ones. Moreover, despite cultural differences in diagnosis and treatment, longevity is about the same in most industrial societies, though it is far from obvious that most industrial societies are equally healthy.

Any notion of health that plays a central role in constructing the idea of ecosystem health will have to be measurable and permit orderings and comparisons. Yet it seems that many particular beliefs and judgements about health are not rooted in measurable indicators or health outcomes. Attempts to provide quantitative criteria for optimal weight, the degree of fitness, or acceptable levels of serum cholesterol (for example) produce seemingly interminable debates. In many cases, not only are there no widely accepted generalisations about what are 'healthy' values for various supposed indicators, but it is even contested whether these indicators are relevant to assessments of health. Even when the importance of various indicators is granted, other problems arise. Clearly longevity, competence to engage in a wide range of activities, and the physical ability to act on one's desires all have some claim to be considered as important to health, yet in particular cases they may support inferences about health that taken together are not consistent. Assessments of health are made even more complicated by the fact that while how we feel is not the same as how healthy we are, it is surely an aspect of our health; and people's feelings of well-being cannot precisely be measured and compared.

I have been arguing that ascriptions of health and disease are surprisingly local and culturally relative. However, it is an obvious fact that there are clear cases of people who are healthy and unhealthy, and would be considered so on any reasonable account in virtually any society. Michael Jordan is 'the very picture of health'.[8] A visit to a hospital will turn up many people who are not. What to say about most of us is not nearly so clear, however. My point is not that the concept of human health is entirely 'a social construction', but rather that there is reason to believe that to some degree this concept is constructed differently in different cultures. Insofar as this is true of human health, notions of ecosystem health may appear to be less objective than their champions would like. The extent to which concepts of health are culturally constructed is the extent to which wrapping environmental goals in this language will fail to objectify them in the way in which environmentalists desire.

PROBLEM TWO: METAPHOR AND MOTIVATION

Some who find the concept of ecosystem health useful believe that it is a metaphor; others believe that ecosystems are literally healthy or not.[9] In my opinion this discussion is truncated: metaphor isn't the only kind of figurative language, and not all uses of language are either metaphorical or literal. The question of whether or not 'ecosystem health' is a metaphor turns more on views about metaphor than on views about ecosystem health.

However there is an important question that lurks in the background of this discussion. This question concerns whether ascriptions of health and disease have the same motivational force when ascribed to ecosystems that they have when ascribed to humans or other creatures. In my view these ascriptions are sufficiently different in kind for there to be important differences in motivational power. We have reasons to care about whether humans are healthy or diseased that we do not have with respect to ecosystems.

One of the principal reasons why health is important to us is because it bears on how we feel. By 'feeling' (and its cognates) I don't mean to suggest some narrow notion that refers only to sensations. In the sense in which I am using the term, disease affects our feelings by affecting the way in which we think about our future, our goals, our life-plans and so on, as well as affecting our sensations and experiences. If we discover that we are diseased yet have no unpleasant sensations, this knowledge about ourselves can affect our attitudes towards the future. It may also invoke concern because the diagnosis of disease may support predictions about how we will feel in the future. In short, to a great extent we are concerned about disease because it causes us to be in states that we dislike. Disease may cause us pain and foreshorten our connection to the future. We are concerned about disease in others because they don't like being sick.

Imagine a case in which someone truly claims not to mind being diseased. Perhaps the person has already lived a fulfilling life, and the disease causes no unpleasant sensations. Or perhaps the person does not mind being sick because he or she has an attitude of tranquil acceptance towards both life and death.[10] Insofar as the person doesn't mind being sick, either because there are no symptoms or because the person has an attitude towards the illness that we respect, we are much less motivated to undertake aggressive treatment that might return the person to health. For people like this, their disease is less of a problem for us because it is less of a problem for them.[11]

Ecosystems don't mind being diseased, not because they have reached a state of remarkable tranquillity, but because they are not the sorts of things that can mind anything. This is an obvious but important difference between humans and ecosystems. Since ecosystems have no preferences about their states, appreciating their desires does not provide a reason for action.[12]

Since ecosystems themselves do not prefer or disprefer any of the states they are in, this should make us wonder whose preferences are at stake in discussions of ecosystem health. The answer is obvious: the preferences of those who are taking part in the discussion.[13] Because ecosystems lack some of the most important properties that lead us to care about the health of someone, it is far from clear what the language of health adds to simple claims about our likes and dislikes in ecosystems. Many of us dislike clear-cut forests for all sorts of reasons, but nothing much seems to be added to our reasons by saying that the clear-cut causes ecosystems to be unhealthy or diseased. Various considerations can be adduced to back the claim of unhealthiness or disease, but to a great extent these considerations can be taken up in our reasons for disliking clear-cuts.

The important point is this: in the human case there is a difference between my friend being in a state that I dislike and one that she dislikes; but there is no such distinction in the case of an ecosystem. Yet without this distinction it is far from clear that appeals to ecosystem health have the motivational power of other appeals to health. This reflects the fact that the objectivity and motivational power of ascriptions of human health are in part grounded in a person's attitude towards his or her own condition, but this objectifying and motivating ground is unavailable in the case of ecosystem health.

It may be objected that this argument proves to much. Plants do not care about the states they are in, yet we are quite comfortable in applying the language of health and disease to them. This objection illuminates an important point. Part of the discomfort one may feel about the concept of ecosystem health concerns the lack of a subject. When we talk about the health of America we are talking about the health of individual Americans. Anyone who rejects this claim is moving in the direction of metaphor, or has an organicist social ontology that keeps rather alarming company (at best Hegel and traditional conservatives, at worst fascists). Part of the task for an advocate of ecosystem health is to convince us that there is a subject that is unified enough for such ascriptions to apply. Even if ascriptions of health to plants were entirely unproblematical this would remain a difficult obstacle to overcome.

For present purposes the point isn't whether or not we can speak sensibly of the health of plants. Even if we can so speak, in the absence of the attitudinal dimension of our ascriptions of health to humans and other creatures, the motivating power of such language is weakened. This is evidenced by the fact that, everything else being equal, most people are not as motivated to respond to disease in a plant as they are to disease in an animal or human. Indeed, those who think we should be motivated more strongly to be concerned about plants typically tell stories about how much philodendrons enjoy Bach or how broccoli suffer when they are steamed. If we were convinced of these claims then there might be an attitudinal dimension to ascriptions of health and disease to plants, and we might be as motivated to respond to their needs as we are to those of

animals. Absent a demonstration of these claims, we might think that someone who ignores the fact that her houseplants are persistently diseased is lacking in horticultural ethics, but our response is dramatically different to someone who fails to get veterinary treatment for his ailing dog. The case for caring for something that cannot care for anything has to be made in a very different way than the case for caring for those creatures who do care for themselves and others, and this difference is reflected in our motivational structure.[14]

PROBLEM THREE: A CONDITION OF OBJECTIFICATION

Thus far I have argued that the language of health when applied to ecosystems typically does not have the motivating power that it has when applied to humans and other creatures, and that even ascriptions of human health may not be as objective as they initially appear. In this section I suggest that our preferences with respect to ecosystems are not good candidates for objectification.

Some of our preferences are more plausibly objectified than others. Preferences for pleasure, happiness, success, security and so on are among them. While there may be people and cultures which have not had these preferences, they are relatively rare. For the most part preferences for pleasure, happiness, and so on are invariant across humans and their societies. Preferences which are relatively invariant are good candidates for objectification. For when we objectify a preference we seem to suggest that it reflects some feature of the Nature of Things. If the preference in question is widely shared, this suggestion is unlikely to be resisted.

Our preferences in ecosystems are not good candidates for objectification because they are relatively unstable. Nash and others have documented how American attitudes towards nature have changed over the centuries.[15] From a cross-cultural perspective, it is clear that what is seen as deplorable and perhaps diseased in one culture may be seen in a very different way in another culture. People from moist, green regions such as Europe and New England often find the great deserts of the American West to be ugly, dead, and uninviting. People from the American West often find regions with a surfeit of organic material equally repugnant.

Michael Soulé has suggested that even our preferences for native versus alien plants is open to revision.[16] Indeed, only a few centuries ago colonists in Australia, New Zealand, and North America engaged in wars against native plants and animals, replacing them with those from home which they found familiar. Although a return to overt, wanton ecological imperialism is not likely in the near future, it is not implausible to suppose that we may come to see our preference for isolated, indigenous ecosystems as anachronistic; and instead come to favour ecosystems that are more cosmopolitan, in much the same way

in which many people now prefer multicultural experiences to those which are provincial. A celebration of alien plants and surprising biological juxtapositions may be more in tune with the postmodern world than attempts to protect native species. Indeed, some social constructionists may even see the struggle between native and exotic species as more or less the same conflict as that between world culture and 'ethnic cleansing'.

VALUES RECONSIDERED

Thus far I have been critical of using the language of ecosystem health in attempts to objectify our appreciation of certain kinds of ecosystems. It might be thought that the only alternative to these attempts is to suppose that our preferences for some ecosystems rather than others is arbitrary and subjective. But that would be a mistake. In my opinion, we need to reject the false dichotomy that presupposes that values are either part of the fabric of world or mere subjective states.

Many people here and now value natural objects. Some natural objects are valued intrinsically in the way in which we value artworks; others are valued instrumentally in the way in which we value calories. In both cases our valuing can be quite intense. Moreover, reasons can be given as to why others should value natural objects in the way in which we do. This reason-giving activity does not require the language of health and disease, nor does it require supposing that someone who does not share our values is metaphysically or scientifically ignorant. Rather such a person may be insensitive in various respects, or ignorant of his or her own evaluational outlook or that of the wider culture. Or such a person may simply have another view, one which itself is supported by reasons that carry substantial force.

In my view, objectivity is not given to us by nature; it is something that we achieve through the creation of a common culture and way of life. Objectivity is rooted in the roles that various values play in the evaluational outlook of a community. Many values are in motion, becoming more or less objective or subjective, depending on the shifting roles they play in people's lives. However, not all values are equally good candidates for objectification. Facts about our biology, history, and culture, along with the characteristics of what is valued, bear on the chances of objectification. Ecosystem health for reasons that I have already given is not here and now a good candidate for objectification.

Since writing the preceding words, I have been accused of vulgar relativism and conventionalism. Callicott writes that:

> Among the ancient Greeks, slavery was a way of life, a foundational aspect of a common culture. Hence by Jamieson's account, in that time and place, slavery was good, objectively good.[17]

He goes on to suggest that I would defend the caste system in India, the subordination of women in Islamic societies, and the suppression of human rights in China.

As a moral vegetarian, vocal advocate of massive reductions in consumption and population, and a critic of zoos and the scientific research establishment, I find it especially ironic to be cast in the role of apologist for the status quo. In this paper and elsewhere I have emphasised that some values are better than others, though there is no uniquely best set of values and that values tend to be dynamic. Perhaps the most important point to make here is that it simply does not follow from the fact that a value has become objectified in a particular society that it is wrong or irrational to fail to act in accordance with this value or to oppose it. Of course it was right to oppose slavery in the 'old south' just as it is now right to oppose factory farming and environmental destruction. Having said this I think that it is important to recognise that the objectification of 'bad values' is less common than might be thought – the fact that they are bad militates against their objectification. Indeed, all of the examples that Callicott mentions are of values that were contested and resisted in their own cultural contexts.

These remarks may help to clear away some of the confusion, but large issues remain that cannot be settled here. The fundamental question that is at issue is whether someone who holds a version of 'subjectivism', 'emotivism', 'conventionalism', or 'irrealism' can have deep green normative values. This is another version of the debate that was occasioned by the rise of emotivism in the second third of this century. Like Hume, Ayer, Stevenson and others, I think that the question of how morality is constructed is quite distinct from questions about the content of morality. Apparently Callicott disagrees.

CONCLUDING REMARKS

I end by noting two further risks entailed by the vocabulary of ecosystem health. This vocabulary invites 'medicalising' our relationship to nature and also contributes to the 'scientistic' outlook that makes it difficult for us to explicitly discuss our conflicts about what we value. These risks are not logically implied by the language of ecosystem health, but they are important because of the way that medical discourse is embedded in western societies.

In recent years a great deal of concern has been expressed about the medicalisation of various forms of human behaviour. When mental illness, crime, or nuclear weapons are seen as pathologies they are represented in a way that seems to remove them from the domain of dialogue and discussion and put them into the domain of physician-experts. If child abuse is a disease then we need professionals to explain this behaviour and treat the disorder. Ordinary people cannot be expected to understand the phenomenon or perhaps even to recognise it. Similarly, if we represent environmental problems as threats to the

health of ecosystems then it is the role of 'ecodocs' to restore them to health. If they fail, then they should be sued for malpractice or incompetence.

Ecodocs are scientists by training, typically ecologists or conservation biologists, and they command a particular expertise and vocabulary. The medicine that they bring to the rescue is scientific medicine. But whatever the case for homeopathy and other alternatives in the area of human medicine, the case for their analogs in the environmental area is very strong. Most of us may think that we can recognise a diseased ecosystem, but there is little agreement about what health consists in or how to bring it about.

Scientism has the effect of driving out the idea of individual responsibility. It is not our fault that some ecosystems have been struck by disease, nor do we have the expertise or responsibility to fix them.[18] This thought, which is invited by the language of ecosystem health, is an entirely wrong way of thinking about environmental problems. Diseased ecosystems are not primarily challenges to the resourcefulness of 'ecodocs', but challenges to our way of life.

In my view, the environmental problems that we face are not fundamentally scientific problems.[19] In large part the environmental crisis is a crisis of the human heart. Our problems are not primarily in the oceans, the atmosphere, or the forests, but in our institutions of governance, our systems of value, and our ways of knowing. There are contradictions in the structure of our values, and massive failures to act on those values which we hold dear. We are attracted to some elements of nature, but repulsed by others. We face conundrums and confusions in reconciling our attitudes and behaviour. Together we create tragic outcomes that no one intends. Whatever role there may be for the rhetoric of ecosystem health, it should not be allowed to lead us away from the real patient who needs help: human beings, and the institutions that we have created.[20]

NOTES

[1] See the papers by Norton, Callicott, and Rapport in this issue, as well as the book by Costanza et al. 1992, which emerged from research funded by the US Environmental Protection Agency.

[2] On the misleading nature of the 'greenhouse effect' see Kempton 1991. On the misleading idea of captive animals as 'ambassadors of the wild' see Jamieson 1985, 1995.

[3] Of course some philosophical thinking about value is an exception to this, but regrettably some is not. For some sophisticated value theory in environmental philosophy see O'Neill 1993, chapter 1; and various essays by Robert Elliot, including most recently Elliot 1992.

[4] In a recent essay, J. Baird Callicott writes regarding an earlier draft of this paper that 'Jamieson's argument ... is vitiated by the arbitrary and stipulative meaning he gives to the terms *objective* and *subjective*' (1995: 107). In Callicott's view 'all reasons, desires, and dispositions clearly belong to the realm of the subjective, according to standard English usage, because they are states of mind' (107). I find these claims surprising for a number of reasons. I will not argue about ordinary language, though I don't think Callicott's claim about 'standard English usage' survives a close reading of the *Oxford*

English Dictionary. But more importantly Callicott's reduction of all desires to the domain of the subjective has the effect of effacing the important distinction between (say) the standing desire of most people for happiness and my occurrent desire for tiramisu. Thomas Nagel (1970) marked this kind of distinction by using the language of objective and subjective reasons, and I am writing in this tradition.

[5] For example in the Soviet Union dissenters were often considered mentally ill and consigned to psychiatric hospitals. During the conflict with the Russian parliament Boris Yeltsin denounced his opponents as 'drunkards, dope addicts, and the mentally ill'. This is ironic since many of them were his close allies during the failed coup of August, 1991.

[6] The history of various attempts to base environmental goals on ecology is nicely traced by Worster (1990). It is also discussed by Callicott (1992). See also the important recent book by Shrader-Frechette and McCoy (1994).

[7] See Payer 1988 for discussion of this example, and many others.

[8] In order to assuage the concern of a referee, I note that Michael Jordan is the greatest basketball who has ever lived.

[9] Callicott (1992) asserts that talk of ecosystem health is metaphorical while Rapport (in Costanza et al. 1992) appears to be a literalist.

[10] I once heard the poet Gary Snyder say that if he gets cancer, he hopes that he will refuse treatment and observe the growth of the cancer as the flowering of another aspect of nature, beautiful and valuable in its own way.

[11] Of course disease can also have 'secondary' ill effects relating to costs, lost productivity, and so on. However this does not bear on the point I am making.

[12] There are some who claim to appreciate the desires of ecosystems, but those who mean this literally are few and far between, and at any rate they are unlikely to be in the business of formulating environmental policy.

[13] Those who are taking part in the discussion can have more or less expansive preferences. For example, when discussing the fate of a particular ecosystem I may take into account the preferences of creatures who are part of this ecosystem and the preferences of all those who care about it. What I do not take into account are the preferences of the ecosystem itself, since it has none.

[14] I argue this in detail in 'Animal Liberation is an Environmental Ethic' (under review). This paper also develops some points made in the section on 'Values Reconsidered.'

[15] Nash 1982.

[16] Soulé 1990.

[17] Callicott 1995: 107.

[18] An extreme example of the abdication of responsibility can be found in my home state of Colorado. As expressed in our local newspapers, we have come to believe that Denver's air pollution is caused by some combination of climate and altitude; human behaviour has nothing to do with it. Another recent example is Texaco's company chairman, Alf DeCrane, who was recently quoted regarding 16.8 million gallons of oil spilled into the Ecuadorian Amazon that 'We didn't spill it. God did.' (Knight-Ridder Newspapers, 20 August, 1995), as if the oil would have been spilled even had there been no pipeline.

[19] This has been a constant theme of mine in recent years. See for example Jamieson 1993.

[20] Earlier versions of this paper were discussed in seminars at the Hastings Center and the University of Colorado and I thank everyone who participated in these events. I am especially grateful to three anonymous referees for their insightful comments.

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