

**Comments Received from Members of the SAB Committee on  
Valuing the Protection of Ecological Systems and Services on  
Draft Discussion Paper from Committee Steering Group:  
*On Valuing Ecological Systems and Services: Paradigms,  
Methods, and a Glossary***

**Comments By**

**Dr. Ann Bostrom** (pg. 2)

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## **Dr. Ann Bostrom**

Associate Dean for Research and Faculty Development, Ivan Allen College

Overall, Rick's paper seems well written and solidly constructed. If it is not too late, I have a few comments on it.

Three main categories of values are included: instrumental, intrinsic, and other. It is probably worth trying to come up with a concept for the 'other' category, rather than treating it as a catchall. The exchange that Jim Boyd's group had with regard to a taxonomy may be relevant in this regard (can't remember if you were part of that discussion). Holmes wrote an extensive, referenced, comment that Angela or I can provide if you don't have it, Klaus. In that context, I suggested that a third category of measures be considered: biophysical (integrity), under which subcategories of indicator species (or sets of species - though the notion of an 'indicator' implies a value related to human welfare, potentially) and absence or evidence of anthropological influence could be considered as categories of measures. Ecosystem health, ecological sustainability and energetics are the values Rick lists in other that I think might be captured by a concept like this.

Rick's discussion of measurement of instrumental values is focused primarily on monetary measures - as illustrated by the statement at the top of page 11: 'including the simplest form, "How much would you be willing to pay for X?" ' Rather, as suggested by Ritov and Kahneman, the simplest form of question is probably some measure of strength of attitude (I. Ritov and D. Kahneman, How People value the Environment: Attitudes versus economic values, in M. Bazerman, D. Messick, A. Tenbrunsel, and K. Wade-Benzoni (eds), Environment, Ethics and Behavior. San Francisco, CA: New Lexington Press, 1997).

On page 12, Rick raises, appropriately, the possibility of providing the individual with information in the case of stated preference methods. Obviously, this poses a

communication challenge, as both the content and presentation of the information will likely influence the resulting preference statements, as the following section highlights. Strengthen the rhetorical link between the two?

There are some cross-cutting issues that strike me as important to discuss in the context of this paper, including uncertainty and categorization. With regard to categorization - when we talk about valuing a change in an ecological system or service, we have to identify both the system (or service) and the change. The latter may be determined by the regulatory or risk management context, but the former is a product of both implicit and explicit categorization processes. For example, different definitions of ecosystems or eco-regions, and debates about what should constitute 'wild' salmon in the northwest (Ransom A. Myers, Simon A. Levin, Russell Lande, Frances C. James, William W. Murdoch, and Robert T. Paine, Hatcheries and Endangered Salmon. *Science*, Vol 303, Issue 5666, 1980 , 26 March 2004).

## **Douglas MacLean**

Professor, Department of Philosophy, University of North Carolina, Chapel Hill

What follows are roughly drafted comments on Rick Freeman's clear and thoughtful paper on valuation. I will focus on his section 2, the valuation paradigms. I will begin by gesturing a different approach to the subject, which I believe to be more intuitively compelling than the paradigm suggested by Rick. I will indicate this different approach with three general claims. Then I will offer some comments on specific points as a way of illustrating the difference in our approaches.

### **A Different Approach**

1. I suggest that we not think of value primarily as a property of objects or states of affairs; rather, we should think of valuing as a feature of our rational behavior. We value many different kinds of things in different ways. *To value something is to take oneself to have reasons for holding certain positive attitudes toward that thing and for acting in certain ways in regard to it.* Exactly what these reasons are, and what actions and attitudes they support, will differ with different cases. Valuing involves acting or responding in ways that are appropriate, and these ways will be determined by the nature of the thing, its role in our individual or collective lives, or our own interests and desires. To value something is to recognize reasons to care for, admire, respect, desire, preserve, or protect that thing. To value some things may involve being true to them or being guided by goals or standards implicit in them (as when we value marriage, loyalty, or the Constitution).
2. We value some things that we do not regard as valuable. We can value things for sentimental or personal or quixotic reasons (as when someone values her collection of "snow globes" that she has collected from various cities and sites that she has visited). To claim that something is *valuable* is to claim that others should share your reasons for valuing it.

3. Certain general distinctions of kind among values may be useful, but they can also lead to confusion. For example, the concept of *instrumental* value is ambiguous. We value some things as means and some things as ends (or in their own right or for their own sake). We sometimes say that what we value merely as a means has instrumental value. We would also say, in this sense, that some things are instrumentally valuable if we have reason to value them as a means to something else we value. Thus, a fungus might be valuable in this sense because it has properties that can be used to cure some horrible disease. The fungus has this value, moreover, even if nobody currently values it, perhaps because its curative powers are yet to be discovered. What we mean is that we have reason to value the fungus.

Instrumental value is also sometimes taken not to mean a way of valuing or a reason for valuing, but rather to mean a kind of value that something has. In this sense it is often contrasted with *intrinsic* value. Intrinsic value is then taken to be something that is valuable in its own right. Now, I find this way of talking confusing, because it leads people to identify valuing something as an end with having intrinsic value. But as I noted above, we value some things as ends that we do not regard as being valuable in their own right or as having any intrinsic value. The concept of intrinsic value is mysterious. I prefer, therefore, to talk about reasons for valuing and to distinguish reasons we have for valuing things as means (or instrumentally) and reasons for valuing them as ends or in their own right. The distinction will be cashed out in the different kinds of reasons and the different kinds of appropriate behavior and attitudes involved.

### **Responses to Freeman**

1. Freeman talks about “rights-based” intrinsic values. To treat something as having a right to exist is a way of valuing it, but we should not take rights to be constitutive of valuing something as an end (or “in its own right”). There are at least two reasons for this. First, rights are often used to constrain or limit appropriate ways of treating something. They do not, in this sense, refer to a kind or an amount of value a thing has. If we say a person has a right to life, it means that certain ways of treating

persons are ruled out. It does not mean that persons have a certain value (which may then be compared and traded off against other values). Secondly, we may grant rights to things that we do not regard as being valuable as ends (or intrinsically valuable). Thus, in the law, entities like corporations can have rights.

2. Freeman says three things about utilitarian values that, taken together, are confusing. He says: (a) Utilitarian values are based on preferences; (b) Economic measures of value are utilitarian; and (c) The economic value of something is a measure of its contribution to human well-being. First, the *summum bonum* in classical utilitarianism is happiness or well-being, which may or may not be based on preference satisfaction, so Freeman is describing only one kind of utilitarianism (and a kind, moreover, that many philosophers have not found very appealing). Secondly, to the extent that economic value is a measure of contribution to well-being, it conforms with the goals of classical utilitarianism, which is different from preference-satisfaction. Finally, I believe that happiness or well-being are things that most people seek as ends, so that they should not be regarded as a species of instrumental value. We should be more precise in our use of these terms.
3. The difference between the approach I have outlined above and Freeman's approach comes out most clearly in the following passage:

Values that are independent of people's present use of the service have been variously termed 'existence,' 'nonuse,' and more recently, 'passive use' values. These values are said to arise from a variety of motives, including a desire to bequeath certain environmental resources to one's heirs or future generations, a sense of stewardship or responsibility for preserving certain features of natural resources, and a desire to preserve options for future use.

First, it is worth noting that Freeman categorizes existence value as a kind of instrumental value, and as I understand the way economists usually use this concept, this is correct. Freeman also notes that these values arise from a variety of motives. I would say that they are linked to a variety of reasons, which justify different

appropriate responses to objects valued in such ways. Finally, however, to say that people value some thing from a sense of stewardship or responsibility to future generations is a way of valuing these things as ends or in their own right. In this sense, we value such things not instrumentally but as ends.

4. If we follow my proposal for characterizing values, we would not make a fundamental distinction between individual and community-based values. (Here I recognize I may be at odds with other philosophers on the committee.) To value something is to take oneself as having a reason to hold certain attitudes toward that thing, and these reasons and the appropriate attitudes can vary in many ways. Reasons for valuing that appeal to our membership in a group or a community, therefore, are just some of the many different kinds of reasons we have for valuing things. They do not single out a separate class of values.

I have not discussed issues of measurement in these comments. In his introduction, Freeman writes, “What is needed is measures of the values associated with *changes* in the degree of protection offered to ecological systems and *changes* in the quantities of various services provided by ecological systems rather than estimates of the *total value* of ecological systems.” I agree that we should not seek estimates of the “total value” of ecological systems, because I don’t think the idea of “total value” has any clear meaning. But in addition to wanting measures of the values associated with changes in the degree of protection of ecological systems, we should seek ways of assessing the reasons for protection, the reasons more generally for valuing ecological systems, and a way of understanding and measuring the costs of various ways of responding to these reasons.

## **Dr. Mark Sagoff**

Senior Research Scholar, Institute for Philosophy and Public Policy, School of Public Affairs, University of Maryland

### **Rick Freeman's Taxonomy of Values – A Question**

The taxonomy of values Rick Freeman has sent us centers on a distinction between instrumental and intrinsic values. Rick uses the example of the preservation of the rainforest to illustrate the difference. He writes (p. 8), “if it is believed that the tropical forest should be preserved independently of any contribution that it might make to human well-being, this is an assertion of intrinsic value. Intrinsic value can be linked to a variety of religious, cultural, and ethical points of view . . . .” Instrumental value, in contrast, is derived from the relation of a good to human welfare.

I want to question whether, as he suggests, community values are instrumental values. Community-based values are essentially political beliefs, convictions, or commitments. They seem to me to reflect “religious, cultural, and ethical points of view.” Therefore, political beliefs, judgments, and choices – community based values – should be listed under “intrinsic” rather than under “instrumental” values.

For example, many of us have views about such matters as the invasion of Iraq, affirmative action, abortion, capital punishment, gay marriage, genetic engineering, the protection of endangered species, and all sorts of other social policies. We argue for these views on the basis of principled views of right and wrong or beliefs about what a good society is obliged to do. According to many surveys, most American believe that since God created nature, we should protect forests, not drive species into extinction, etc. Beliefs about right and wrong, better or worse, good or evil, which views about public policy typically reflect, represent intrinsic not instrumental values.

As Rick has written, people base their political choices “on what they think is good for society as a whole rather than what is good for them as individuals” (p. 9). Occasionally, a person's own welfare may inform his political opinions; for example, if you are gay and want to get married, a policy the permits gay marriage is likely to appeal to you. For the most part, however, people base their political views and judgments – their beliefs about the good society – on principled arguments and convictions and not on what they think benefits them. Members of the League to Abolish Capital Punishment,

for example, pursue a principled view about a social obligation not to kill. They are not themselves afraid of being hanged.

Often, the views or opinions people advocate about social policy – particularly environmental policy – directly conflict with what they believe benefits them. Rick provided a good example in an e-mail he sent me. He wrote,

I can (do) advocate a Pigouvian tax on power plant emissions because I think that it will pass a benefit-cost test (Potential Pareto Improvement) even though I am pretty sure that the costs to me will out weigh my benefits since I do not live in a high air pollution locale.

We know that 1) instrumental value is based on the contribution that a good or choice might make to human well-being and 2) that community values – or political judgments and opinions – have no relation whatever to the well-being or welfare of those who advocate them; indeed, a person’s political values and choices often conflict with what that person believes benefits her or him. If so, then it seems we should collect political opinions or community-based values under the rubric of intrinsic value – values that relate to “religious, cultural, and ethical points of view” -- rather than under the rubric of instrumental value, i.e., values that relate to human welfare or well-being.

This is an important difference because environmental policy, one would think, should respond primarily to the political views and beliefs of citizens. If these are construed as intrinsic values, then WTP would not be relevant in measuring them. (I assume WTP measures welfare or benefit.) If economists restricted WTP estimates to judgments people made about what benefits them – rather than extending this measure through CV and other instruments to all preferences and choices based on any reason whatsoever – we might get more clarity about the role of economic valuation in environmental policy. I imagine that community-based or political convictions and judgments represent by far the preponderance of values that people bring to the discussion of social policy. It is a logical error – a “category mistake – to mistake beliefs for benefits and to treat community-based values as utility-based preferences.

## More Comments from Dr. Sagoff

Dear Angela:

In the recent conference call, you suggested that we comment particularly on the taxonomy of values Rick Freeman prepared for us. Rick helpfully distinguishes between *instrumental value* and *intrinsic value*. I want to propose that intrinsic value may be subdivided into aesthetic and ethical value. People may prize and want to protect naturally occurring ecosystems, that is to say, because 1) they find some benefit or utility in them (instrumental or economic value); 2) they recognize expressive, historical, and other aesthetic qualities they believe are worth preserving for their own sake (aesthetic value); or 3) they believe that an ethical principle requires society to behave toward nature, e.g., endangered species, in a particular way. These are different ways of valuing ecosystems.

Thus, I would propose to widen Rick's taxonomy to comprise – and to distinguish – three kinds of value judgments. First, we make judgments as individuals about what is good for or benefits us. Each individual judges for himself or herself. Economists usually assume that the individual is the best or the most legitimate authority, except in special cases, about what is good for her or him.

Second, we make aesthetic judgments about what is beautiful or is worth appreciating and protecting for its expressive, symbolic, and formal properties. The individual judges not for himself or herself only but expects others to agree – or, if they do not agree, to offer reasons to believe the judgment is mistaken. Aesthetic judgments refer to the qualities of the object which are available to others to perceive as well. They are “disinterested” judgments because they do not refer to the welfare or well-being of the individual who makes them.

Third, we form judgments about what is good in general, right as a matter of principle, or appropriate in view of a particular situation. For example, people argue whether it was morally permissible for the United States to invade Iraq without international sanction or a clear *causus belli*. People may similarly argue about the permissibility of driving species into extinction – and similarly make reasoned moral arguments on either side. In instances of debate over right and wrong, good and evil,

etc., people do not represent what they believe is good for them. Rather, they propose arguments for beliefs about the good society or the public good – arguments they present on the merits for debate and deliberation.

Judgments of the first kind – judgments we make in view of our own well-being -- answer the question, “What is good for me?” Judgments of the second and third kinds – moral and aesthetic judgments – answer questions such as, “What is good or right in view of the situation?” “What is wonderful or beautiful because of its intrinsic properties?” These kinds of questions turn not on judgments about what is good for the individual but judgments about what is good in general, good from the perspective of the larger community, or good in itself.

I want to suggest that Rick’s discussion sometimes bypasses the important difference between saying that something is *good for me* and saying that something is *good in itself, good from the point of view of the community in general, or good because of its aesthetic or intrinsic qualities*. In our political lives we do not pursue merely private conceptions of *the good life* but also public conceptions of *the good society*. We are not concerned only about the way a social decision or outcome affects us. We are also concerned with whether the decision or outcome is right, fair, or good in view of values or reasons we believe carry weight with society as a whole.

In his proposed taxonomy, Rick asserts mistakenly, I believe, that non-use values reflect judgments people make about their own well-being rather than aesthetic and ethical judgments. He writes of non-use value that people “perceive themselves to be better off (increased well-being) because of the existence of the service even though they do not make use of the service themselves.” Those who support the Endangered Species Act, on the contrary, do not perceive themselves as better off because of the existence of creatures they will not experience or use. Rather, they may believe these creatures have a right to exist, are intended by the Creator to exist, or some such notion.

It seems to me that most or even all “existence,” “nonuse,” or “passive use” values arise from and depend on aesthetic and moral judgments rather than judgments of well-being. In other words, people who make no use of an ecosystem may value and call for its protection because they believe it has aesthetic or ethical value and not because they believe they will benefit in any way as a result. If this is true, then there is no connection at all between non-use value (what people care about on aesthetic and ethical

grounds) and their perceived well-being. There is no basis for the assumption Rick makes that “people perceive themselves to be better off” because of the continued existence of environmental goods they value not for the use they make of them but on aesthetic or ethical grounds. Even if they did in some way see themselves as better off, this perception would not be the reason, basis, or purpose of the non-use value.

Researchers who have studied the reasons people give for bids on Contingent Valuation (CV) studies, which purport to measure existence value, consistently have found that willingness-to-pay (WTP) has no relation to perceived benefit or increments in welfare. In one example, a careful study showed that ethical considerations dominate economic ones in responses to CV surveys.<sup>1</sup> “Our results provide an assessment of the frequency and seriousness of these considerations in our sample: they are frequent and they are significant determinants of WTP responses.”<sup>2</sup> In another study, researchers found that existence or non-use value “is almost entirely driven by ethical considerations precisely because it is disinterested value.”<sup>3</sup>

Some economists acknowledge that “existence value has been argued to involve a moral ‘commitment’ which is not in any way at all self-interested.”<sup>4</sup> They explain, “Commitment can be defined in terms of a person choosing an act that he believes will yield a lower level of personal welfare to him than an alternative that is also available to him.” If “existence” value lowers welfare, on which side of the cost-benefit equation should it be entered? The individual does not want less welfare per se, but “adherence

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<sup>1</sup> D.A. Schkade & J.W. Payne, “How People Respond to Contingent Valuation Questions: A Verbal Protocol Analysis of Willingness to Pay for an Environmental Regulation.” *Journal of Environmental Economics and Management*, 26(1994): 88, 89.

<sup>2</sup> Ibid.

<sup>3</sup> E.B. Barbier et al., “Economic Value of Biodiversity,” *Global Biodiversity Assessment* ed. V.H. Heywood et al. (New York: Cambridge University Press, 1995), p. 836.

<sup>4</sup> Ibid. (citing Amartya Sen, “Rational Fools: A Critique of the Behavior Foundations of Economic Theory.” *Philosophy and Public Affairs*, 16(1977): 317).

to one's moral commitments will be as important as personal economic welfare maximization and may conflict with it.”<sup>5</sup>

If we can agree that non-use values generally represent judgments individuals make about what is right or good from the perspective of society rather than what benefits them, we may include them under community-based values, i.e., choices individuals make “based on what they think is good for society as a whole rather than what is good for them as individuals.” These values plainly must be sorted out through a political process. As Rick says, “The values reflected by these preferences would be revealed through some sort of deliberative process involving open discussion.”

If my argument so far is correct, then the taxonomy we want may distinguish instrumental values (values based on judgments individual make about what benefits them) and moral and aesthetic values (comprising non-use and community based values) which are not dependent on any perceived or expected welfare change. Methods of valuation that employ WTP as a measure logically can apply only to judgments of the first kind – instrumental judgments – insofar as WTP is considered a measure of welfare, benefit, or well-being. Logically, a measure of individual welfare or benefit cannot be used to weigh ethical commitments, aesthetic judgments, and community-based values, since these are not related to individual welfare or benefit.

Sometimes economists use WTP as a measure of “utility” which they define and measure in terms of the amount people are willing to pay – for whatever reason – for outcomes they favor. In this context WTP measures WTP and nothing else. The question then arises why things should be considered good or valuable to the extent people are willing to pay for them. Absent any relationship between WTP and instrumental value, i.e., benefit or well-being, the role of WTP in policy analysis cannot be explained. Thus, WTP can measure at most instrumental values and would not be relevant to non-use values, such as community-based aesthetic and ethical judgments. These must be sorted out through a deliberative political process.

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<sup>5</sup> Ibid. The authors nicely summarize the question as follows: “Indeed, the debate over environmental values often turns on whether values are considered as ethical judgements or equivalence measures, i.e. whether environmental values are statements of principle or a reflection of social costs.” Ibid., 829.

## **Dr. Paul Slovic**

Professor, Department of Psychology, Decision Research, University of Oregon

I wish to thank Rick Freeman for beginning the task of focusing the committee on the methods of valuation. I think it will serve the purpose of stimulating discussion, and I offer the following comments in that spirit.

1. I concur with the point on page 1 (numbered as page 6 in the draft I have) that the valuation objective should be to inform the agency's decision makers as they choose among policy measures. This is a key observation to guide our discussions.

2. In regard to informing decision makers, the question is the role that quantitative measures of value should have as opposed to qualitative information. Thus, on page 9, the discussion of community-based values and social preferences notes that "The values reflected by these preferences would be revealed through some sort of deliberation process involving open discussion." Such deliberation is likely to be mostly qualitative, perhaps being informed in some way by quantitative analysis. There is likely a parallel here with the analytic/deliberative process recommended by the National Academy of Sciences in their 1996 report "Understanding Risk: Decision Making in a Democratic Society."

3. The draft correctly points out the importance of definitions and provides a glossary of terms. The various terms relating to value, valuation, etc., seem inconsistent to me. For example, the definition of value as "a fair or proper equivalent in money" seems inconsistent with the definition of "intrinsic value" which, it seems to me, is not usefully monetized. Checking the dictionary indicates other definitions more consistent with intrinsic value, e.g., -- that quality of a thing according to which it is thought of as being more or less desirable, useful, estimable, important, etc.  
-- that which is desirable or worthy of esteem for its own sake; thing or quality having intrinsic worth.

4. Definitional issues are further highlighted in the discussion on page 10, noting that "the value of changes in biodiversity could be defined in several ways depending on the definition of biodiversity that has been chosen (genetic distance, species richness, and so forth). This is a very important point, which has clear parallels

to the discussion in the “Trust, Emotion, Sex. . .” paper that I distributed. I argue, in that paper, that “defining risk is an exercise of power.” I would argue here that defining the value of changes in ecosystem services is also an exercise of power. This has strong implications for the process of decision making in a democratic society.

5. There have been extensive critiques of revealed and stated preferences both in the risk literature and in economic valuation literature. These critiques should be examined. One such critique led to the paper on constructing values (Gregory, et al, 1993) cited by Freeman on page 13. The draft states that the need to construct values occurs when individuals do not have well-formed preferences, making responses to willingness-to-pay questions unreliable. This is true. But footnote 4 says this doesn’t apply to values estimated from revealed preference methods since such data come from choices made by individuals who experience the consequences of their actions. However, a great many impacts on ecosystems would not be easily or immediately experienced, hence feedback and learning would be poor. Thus value construction might also be preferable to revealed preference.

6. Also, on page 13, the discussion of Joe Arvai’s presentation states that structured processes with stakeholders may help deal with resource management and environmental problems (I take this to mean decision making), but such problems don’t estimate the values revealed by the stakeholders. But isn’t the prime objective to help decision makers rather than estimate values?

Thanks, Rick, for initiating discussion of this important topic.