The Importance of Ethics in Environmental Economics with a Focus on Existence Values

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Abstract. The importance of ethics and fundamental value judgments in environmental economics is high-lighted by discussing the controversial concept of existence values. The social value depends crucially on the social objective, which is not necessarily self-evident, e.g., since some individuals tend to value nature intrinsically. It is shown that the motives behind willingness to pay figures matter for the social value, and the conventional view that people respond to CV questions solely in order to maximize their own utility or well-being is questioned. The importance of being explicit about value judgments is emphasized, and it is argued that environmental economics should consider non-conventional assumptions which take the social context into account to a larger degree.

Key words: altruism, contingent valuation, ethics, existence values, motives, simplifying assumptions, welfare theory

JEL classification: D61, D64, H41

1. Introduction: Why Ethics is Important in Environmental Economics

Given that ethics and moral philosophy are important subjects *per se*, why do we need to impose these into the discipline of environmental economics? Is it not more rational that moral philosophers deal with ethics, since they are professionally trained to do so, while we as economists could deal with subjects and issues which we are better trained to deal with, such as efficiency? The fundamental answer to these questions is that, although it is (unfortunately) correct that economists are often not very well trained in ethics, the issues dealt with in environmental economics are often of an ethical *nature*. Hence, the choice is not really whether we should impose ethical values or not, but whether we should deal with ethics explicitly or implicitly. Although it is true that all normative economics has to rely on ethical values, these values may be less obvious, or there may be less agreement concerning these values in environmental economics, compared to many other sub-disciplines of economics. Therefore, it is often important to be explicit about the ethical values involved, which will be illustrated by discussing the treatment of so called existence values, or non-use values, in the economic valuation literature.

1.1. MOTIVES

Following Robbins (1935) and other proponents of the "New Welfare Economics", there is a seemingly common view among economists that we should focus solely on the willingness to pay (WTP) for various goods (including public goods such as environmental improvements), and hence leave the *motivation* for these WTPs to others, such as psychologists. Cummings and Harrison (1995) have criticized the estimation of existence values (introduced by Krutilla 1967) along this line: "There exists no operationally meaningful way by which one might decompose nonuse value into motive-related components. We can observe values, but we cannot observe motives" (p. 241). Here, on the contrary, it will be argued that we need to go even deeper into individuals' motivations for their WTPs than is common practice in the valuation literature. That motives matter is of course not a completely novel idea. As expressed by Bentham (1996, p. 96) [1822]:

> It is an acknowledged truth, that every kind of act whatever [. . .] is apt to assume a different character, and be attended with different effects, according to the nature of the *motive* which gives birth to it. This makes it requisite to take a view of the several motives by which human conduct is liable to be influenced. (Italics in original.)

No doubt, it is often very difficult to empirically observe individual motives, but, as we will see, these motives are often completely crucial for the social value of the public good in question. Hence, it is not possible for economists to escape individual motivations if we want to make good estimations of the social value of public goods.

1.2. INTRINSIC AND INDIRECT ETHICAL VALUES IN ECONOMICS

There appears to be an everlasting discussion whether it is useful or not to distinguish between positive (or descriptive) and normative economics. Some philosophers, such as Putnam (1993), argue against such a separation of facts and values since value judgments are often implicit in seemingly factual statements, and since positive and normative aspects are often entangled through the language (e.g., "it is a sin to kill"). Others, such as Weston (1994), argue that despite the difficulties it is often useful to try to distinguish most issues in economics as either positive or normative. If we accept this distinction as practical, we must be aware of the fact that positive or descriptive economics will still often be value-laden, since the researcher him/herself does always hold some values which will often affect the result or the choice of research topics (see e.g., Myrdal 1969). In any case, it should be clear that in order to give any kind of policy recommendations, we need some ethical foundation. In other words, if we consider it good that the government undertakes a specific action, there must be some ethical motivations behind *why* we think this is good. Costs and benefits to be included in social cost-benefit analysis (CBA) are also intrinsically value-laden since these are *derived*

from a social objective, which by definition is ethical in nature. For accessible treatments of economics and ethics in general, see Hausman and McPherson (1993, 1996), Sen (1987) or Vickers (1997). Hamlin (1996) provides a good collection of published work in the area.

1.3. THE SOCIAL OBJECTIVE

Given that we have to rely on some ethical values, we need to ask: What is the social good to be maximized?[1] This is a very old source of dispute, both in economics and moral philosophy, and in both disciplines various alternatives have been proposed. In economics, the emphasis has generally been on *human* well-being (broadly defined), in one way or another. As expressed by Freeman (1993, p. 7): "Society should make changes in environmental resource allocation only if the results are worth more in terms of individuals' welfare than what is given up by diverting resources and inputs from other uses." However, as we will see in the next section, this assumption may contradict consumer sovereignty with regard to what individuals think that the government *should* consider. If people think that the government should also, to some extent, value animals and nature intrinsically, i.e., independently of human well-being, it may appear somewhat problematic to maintain the view that the government should focus exclusively on *human* well-being. This is also the view of many moral philosophers, perhaps especially in the utilitarian tradition, such as Singer (1975, 1979). As expressed by Bentham (1996, p. 283) [1822]: "The question is not, Can they *reason*? nor, Can they *talk*? but, Can they *suffer*?" (Italics in original.) This illustrates that it may often be important to specify the social objective underlying the analysis quite carefully.

1.4. DISTRIBUTIONAL ISSUES

Issues related to distribution have often been considered unscientific by proponents of the New Welfare Economics, since they involve interpersonal comparisons of utility.[2] Therefore, one has in CBAs instead often relied on any of the compensation criteria proposed by Hicks (1939), Kaldor (1939) and Scitovsky (1941), or simply aggregate WTP versus costs. In addition to severe problems of inconsistency (Samuelson 1950; Boadway 1974; Blackorby 1990), these measures are not derived from any ethical principles. As noted by Sen (1987), they are ethically uncontroversial only when compensation is actually paid, but then the criteria are not needed since we would then have a Pareto improvement. The "New, New Welfare Economics", commonly considered to begin with the seminal paper by Mirrlees (1971), has therefore returned to the view of classical economists such as Edgeworth and Mill that interpersonal comparisons of utility are needed in order to obtain any policy recommendations when more than a single individual is involved, cf. Harrod (1938). A utilitarian (or weighted utilitarian) social welfare function, together with an explicit or implicit assumption of the concavity in income of the

utilities (and/or in utility of the welfare function), is the most common way to represent such comparisons.

Still, unweighted willingness to pay could be reasonable measures of utility changes if the distributional effects are considered to be small. Furthermore, under certain conditions[3] it can be shown to be optimal *not* to deal with distribution in CBA, but instead to focus solely on efficiency and leave distributional concern to income taxation; see Christiansen (1981) or Boadway and Keen (1993). However, these conditions are very special and they are often very far from fulfilled.

2. Existence Values and Different Motivations for Non-use Values in CBA

In this section we will discuss several motives for a positive WTP for a re-source which the individual has no direct use of. In addition, we assume that they with certainty will have no use of the resource in the future; hence, the option and quasi-option values are zero. We will first consider the perhaps most com-monly assumed motivation, pure altruism, and then discuss alternative motivations including paternalistic (environment-focused) altruism, impure altruism, genuine altruism, altruism towards non-human creatures, commitments, and social norms.

2.1. PURE ALTRUISM

Consider a society consisting of two individuals A and B with utility functions given by $u^A = u^A(x^A, G, u^B)$ and $u^B = u^B(x^B, G, u^A)$, where x is the private consumption of a Hicksian composite good and G is the provision of environmental quality (a pure public good). Thus, each individual derives utility from the other individual's utility. A Pareto efficient allocation is obtained by maximizing the utility of individual A subject to the constraints of constant utility of individual B, and that total income is equal to consumption times prices. Then we have:

$$L - u^A(x^A, G, u^B) + \lambda(u_0^B - u^B(x^B, G, u^A)) + \mu(Y - p(x^A + x^B) - p_G G). \tag{1}$$

The corresponding first order conditions with regard to x^A, x^B and G for an interior solution are given by:

$$\frac{1}{D} \frac{\partial u^A}{\partial x^A} \left(1 - \lambda \frac{\partial u^A}{\partial u^B}\right) = \mu p, \tag{2}$$

$$\frac{1}{D} \frac{\partial u^B}{\partial x^B} \left(\frac{\partial u^A}{\partial u^B} - \lambda\right) = \mu p, \tag{3}$$

$$\frac{1}{D} \frac{\partial u^A}{\partial G} + \frac{1}{D} \frac{\partial u^A}{\partial u^B} \frac{\partial u^B}{\partial G} - \frac{\lambda}{D} \left(\frac{\partial u^B}{\partial G} + \frac{\partial u^B}{\partial u^A} \frac{\partial u^A}{\partial G}\right) = \mu p_G, \tag{4}$$

where $D = 1 - \frac{\partial u^A}{\partial u^B} \frac{\partial u^B}{\partial u^A}$.

Eliminating the Lagrange multipliers λ and μ we get

$$\frac{\partial u^A}{\partial G} \bigg/ \frac{\partial u^A}{\partial x^A} + \frac{\partial u^B}{\partial G} \bigg/ \frac{\partial u^B}{\partial x^B} = p_G/p, \tag{5}$$

i.e., the basic Samuelson (1954) rule, $\sum \text{MRS}_{Gx} = \text{MRT}_{Gx}$. This has been shown previously by many including Bergstrom (1982), Hochman and Rogers (1969) and Lazo et al. (1997), and the intuition is straightforward: An additional unit of the public good and a corresponding decrease in private goods would now decrease A's utility if we disregard the altruistically derived utility. But since we are holding B's utility constant, A's utility derived from altruistic concern would not change. Hence, A's utility decreases while B's is constant and no Pareto improvement is possible.

Whether individuals' WTP will be affected by their altruistic concern or not turns out to depend crucially on how the WTP question is posed, i.e., on the construction of the payment vehicle (Madariaga and McConnell 1987). Consider the following two alternatives:

1. The public good would be provided if you pay x USD, otherwise it will not.
2. The public good will be provided if the income tax is raised by x USD for all, otherwise it will not.

In case 1, an individual would at the margin be willing to pay an amount which is larger than the MRS between the public and the private good, due to the altruistic concern, since his/her utility increases due to the fact that others' utilities increase. This is the basis for Milgrom's (1993) claim about double-counting in the presence of (pure) altruism. In case 2, however, this is generally not so. Indeed, if each individual is informed that others would pay their marginal WTP for an increase in provision, then A would not receive any additional "altruistic utility" from increased G since, at the margin, B's utility increase from G would be off-set by decreased x through increased taxes; see e.g., Lazo et al. (1997).

2.2. PATERNALISTIC ALTRUISM AND IMPURE ALTRUISM

An alternative motivation is that individuals do not bother about others' utilities *per se*, but about certain elements in their utility function (Archibald and Donaldson 1976), such as their environmental quality. The utility function in the two-individual case can then be written $u^A = u^A(x^A, G^A(G), G^B(G))$ and $u^B = u^B(x^B, G^B(G), G^A(G))$, respectively, where u is monotonically increasing in all arguments and where G^A and G^B are increasing in G. The Pareto efficient allocation of G can be derived as for pure altruism:

$$\left(\frac{\partial u^A}{\partial G^A} \frac{\partial G^A}{\partial G} + \frac{\partial u^A}{\partial G^B} \frac{\partial G^B}{\partial G} \right) \bigg/ \frac{\partial u^A}{\partial x^A} + \left(\frac{\partial u^B}{\partial G^B} \frac{\partial G^B}{\partial G} + \frac{\partial u^B}{\partial G^A} \frac{\partial G^A}{\partial G} \right) \bigg/ \frac{\partial u^B}{\partial x^B} = p_G/p. \tag{6}$$

Hence, the socially optimal provision of the public good will be over-provided relative to the Samuelson rule; see Jones-Lee (1992) for an application to the value of a statistical life. But the individual marginal WTP (in terms of x) for A is

$$\frac{\partial u^A}{\partial G} \bigg/ \frac{\partial u^A}{\partial x^A} = \left(\frac{\partial u^A}{\partial G^A} \frac{\partial G^A}{\partial G} + \frac{\partial u^A}{\partial G^B} \frac{\partial G^B}{\partial G} \right) \bigg/ \frac{\partial u^A}{\partial x^A} \qquad (7)$$

so a Pareto efficient allocation would still result from equating the sum of individual marginal WTP with the price. Thus, we have no corresponding double-counting here as in Milgrom's pure altruism case (see Johansson 1992). Consequently, one should include individual WTP which is based on paternalistic altruism in a social CBA.[4]

However, there may be other motivations too. First, we cannot rule out so called *impure* altruism (Andreoni 1989, 1990), i.e., that people get some "warm-glow" effect from contributing to the utility of others.[5] If this is the case, and that this feeling arises only in the interview situation, then it is clear that such values would not represent what the government would like to maximize. Whether such effects are important or not has been discussed intensively. Kahneman and Knetsch (1992) claim to provide evidence that individuals' responses to WTP questions are largely reflecting a "purchase of moral satisfaction", whereas Hanemann argues that such warm-glow effects seem unlikely if a sound payment vehicle is used: " 'Warm glow' is simply a red herring. I have seen no evidence that people get a warm glow from voting to raise their own taxes, whether in real life or in a contingent valuation study" (Hanemann 1994, p. 33). Still, irrespective of the payment vehicle one could argue in favor of a warm-glow effect from protecting the environment *per se*, and Spash and Hanley (1995) found evidence that many people do seem to value the environment intrinsically, i.e., independently of humans' derived utility from it.

2.3. GENUINE ALTRUISM, COMMITMENTS, AND SOCIAL NORMS

In addition to altruism which is ultimately selfish in the sense that individuals maximize their own utility (or well-being), which sometimes happens to include others' utilities or consumption as arguments, there may be other motives. Sen (1977) made a useful distinction between sympathy, which is basically selfish altruism of the kind discussed so far, and commitment which is implicitly defined "in terms of a person choosing an act that he believes will yield a lower level of personal welfare to him" (Sen 1977, p. 327). Edwards (1986, 1992) and Johansson (1997a) have, following Kennet (1980), used the notion *genuine* altruism to characterize actions motivated solely by the utility of others, without deriving any utility (or individual welfare) from the altruism. Sugden (1982) discusses several possibilities to explain philanthropic behavior and he believes that "the most promising, is to drop the assumption of utility maximization" (p. 349). Instead he proposes various motives including rule-utilitarianism and Kantian ethics. Several authors have emphasized

that social norms may be very important for stated WTPs in addition to individual preferences. Thus, the crucial element here is that the individuals are no longer assumed *solely* to maximize their own utility. In a purely descriptive context, this distinction may be of limited importance, but in CBA it is crucial.[6]

Much of the valuation literature (as well as economics literature in general) has not discussed this problem, but merely assumed that individual WTPs reflect individual preferences, and hence their utility functions or well-being. Brookshire et al. (1986) is an early exception and they make a distinction between what they denote ethically motivated answers and preference based answers. They consider only the latter to be true economic values to be used in CBA based on what they consider to be the normative basis for CBA, individual rationality and efficiency according to the Hicks-Kaldor compensation criteria. Mitchell and Carson (1989) responded to Brookshire et al. that "people gain utility from helping others without expectation of a material reward because they have learned to value this behavior", that "those who make choices of this kind obtain utility from satisfying internalized norms", and that "in properly conducted CV studies choices based on these preferences are motivated by self-interest and egoistic considerations" (p. 66). Hardly anyone would argue that such selfish altruism has *no* role to play, or that it is never costly (in terms of utility) to brake social norms. However, as noted by Aldred (1994), the problem with the view of Mitchell and Carson is that they seem to think that individual utility maximization is the whole story, i.e., that there are *no* other motivations.

Since the Brookshire et al. study, a number of papers have questioned whether people really are responding to CV surveys mainly as consumers, and argue that they instead (at least partly) respond as citizens; see Sagoff (1994, 1998), Blamey et al. (1995), Common et al. (1997), Stevens et al. (1991, 1993), and Kohn (1993). Indeed, it seems reasonable to assume that much of individuals' WTP concerning preserving various species such as blue whales, or exotic flowers, is a reflection of what individuals think is an overall "good" or reasonable decision by the government, rather than to assume that individuals' happiness or well-being are related to the existence of the exotic flower to an extent corresponding to the stated WTPs. If this is correct, does this imply that such values should be excluded from a CBA? Not necessarily.[7]

First, if the citizens prefer that the government would put some weight also on the existence of blue whales, for whatever reason, it would violate consumer (or citizen) sovereignty if the government did not. Similarly, if the citizens would prefer to put some weight also on the well-being of future generations, which is reflected in a positive WTP, it would seem odd if the government would neglect this value since it does not contribute to the well-being of the respondents.[8] To deny these considerations to be part of the public decision-making would then be to deny the fact that individuals may have ethically motivated opinions about nature and future generations.

However, it should be emphasized that there exists no universal ethical laws saying that the government should always do what the individuals prefer it to do, even if we in a democracy expect this link to be quite strong (and many people would probably prefer this link to be even stronger). Consider an opposite case: Through a CV study one has concluded that people of the current generation would prefer not to undertake any costly measures whatsoever to reduce the risk of a future environmental catastrophe (e.g., climate change). Should we then encourage the government to follow their advice? Even if this is a difficult question, involving the fundamental credibility of a democracy, it is hard to answer unconditionally yes.

This leads us to the question whether CVM surveys, or other methods to find out individuals' WTP, really are the most appropriate methods for issues of this kind, where the WTP is primarily based on some kind of existence values?[9] If the alternative would be to put the value equal to zero (or very close to zero), the answer would probably be yes, but there may be alternatives. Consider the biodiversity issue. A positive WTP may reflect some kind of individual concern about biodiversity, but it is indeed hard to interpret the sum of individuals' WTP as a "total economic value" or similar, since there are no obvious reasons why the welfare of future generations, through ecosystem effects and the large uncertainties involved, would be considered in an appropriate way (Gowdy 1997). Obvious alternatives include expert judgements by various disciplines, e.g., including biologists and environmental economists, to be used directly in the political process. In such a process, the precautionary principle (O'Riordan and Jordan 1995) and the concept of Safe Minimum Standards, to avoid extinction of endangered species, may be useful (Bishop 1978; Crowards 1997; Stevens et al. 1991).[10]

Of course, there may be other reasons to determine individual WTPs for public goods than to estimate a social value to be used in a CB analysis. For example, it may be of strategic importance for politicians and various interest groups to know individual WTPs for a number of public goods; the recent WTP study for protecting tropical rain forests by Kramer and Mercer (1997) appears primarily to have this perspective. Still, it is very important to separate this purpose from the purpose of estimating the appropriate benefit to use in a social cost-benefit analysis.

3. Recommendations for Future Research

If we are to take into account more seriously the fundamental values involved, and what we are in fact trying to maximize, this may have far-reaching consequences for many issues of environmental economics. One example is the economics of the greenhouse effect, where the choice of discount rate, and in particular the "pure rate of time preference", is very crucial for the result of cost-benefit calculations, and where distributional aspects are important both in time and space; see the paper by Azar in this volume. How to handle these problems must of course ultimately be based on some ethical values. It may in this context also be wise to explore

the economic consequences of alternative right-based ethical theories, which are common in contemporary moral philosophy (Glasser 1998; Spash 1993).

A closer focus on the fundamental objective will also reveal that the link from income, or willingness to pay, to actual well-being may be quite weak; see the recent policy forum on economics and happiness in the *Economic Journal* (Dixon 1997; Frank 1997; Ng 1997; Oswald 1997). For example, there is much evidence that not only the *absolute* level of income and consumption of various goods matter for the perceived well-being, but also the *relative* level compared to others (Frank 1985 a, b; Easterlin 1995). If this is correct, it should be considered in trade-offs between increased consumption on a global level today, versus better environmental quality today, or versus the risk of an environmental catastrophe tomorrow (Ng 1997).

Furthermore, it is conventionally assumed that preferences and utility functions are fixed and exogenous even though we (hopefully) realize that this is often far from correct, perhaps especially in relation to the environment (Norton et al. 1998; Vatn and Bromley 1994). Since welfare effects of changing preferences may indeed be very important (Dixit and Norman 1978; Fuchs 1996; Pollak 1976; Romer 1998) they need to be addressed further in environmental economics. This applies also to the related issue of social norms (Elster 1989a, b) related to the environment. Ostrom (1990) has effectively demonstrated the importance of such norms for a successful treatment of local commons in developing countries. It appears generally to be important that environmental economics (and hence economists) will be open-minded towards non-conventional behavioral assumptions, and assumptions regarding what ultimately creates well-being, which are less atomistic (in the sense of reductionist individualism), and hence take the social context into account to a larger degree than what is common, both in empirical and theoretical work.

4. Concluding Remarks

In this paper we have discussed and demonstrated the importance of being explicit about the fundamental social objective, and hence the value judgements involved. We have also seen that individuals' motives behind stated WTPs may be very important in determining the social value of environmental public goods. In particular, the conventional view that people respond to CV questions solely in order to maximize their own utility or well-being is questioned. In addition, and partly as a consequence, it has been argued that we should consider and respond to the lack of realism behind some other common assumptions.

However, that economics, as all science, is based on simplifying assumptions is both unavoidable and desirable. As explained by Sen (1985, p. 341): "We want a canonical form that is uncomplicated enough to be easily usable in theoretical and empirical analysis. But we also want an assumption structure that is not fundamentally at odds with the real world, nor one that makes simplicity take the form of naïvety." This trade-off may (and should) of course result in different assumptions

for different problems in environmental economics. Most importantly, we must realize that there *is* a trade-off and that the benefit of larger realism may sometimes (and perhaps often) be worth the cost of larger complexity.

Acknowledgement

Notes

1. An ethical theory which is concerned with the maximization of a social good is often denoted a *teleological* ethical theory or *consequentialism* (Broome 1991). However, although less frequently used in economics, there is also a long philosophical tradition of right-based or *deontological* ethics, such as Kantian ethics (Glasser 1998). As explained by Dasgupta (1993, pp. 27–28): "The key to deontological reasoning lies in a recognition of the priority of the right over the good. The hallmark of consequentialism is just the reverse: it acknowledges the priority of the good over the right."

2. For an explicit critique of this view, and a forceful defense of the use of interpersonal comparisons of utility, see Blackorby (1990). See Elster and Roemer (1991) for a comprehensive treatment of this issue.

3. Such as the presence of an optimal non-linear income tax and weak separability of the utility function between leisure and consumption of (private and public) goods.

4. Some authors have indicated that Milgrom (1993) failed to realize this conclusion. However, it seems clear from the subsequent "discussion" in Hausman (1993, pp. 436–439) that Milgrom was aware of this implication, although he preferred not to use the notion "altruism" for (what is here denoted) paternalistic altruism.

5. However, it is clear that Andreoni never intended that impure altruism is the only (or necessarily the most important) kind of altruism for individual choice. Indeed, in Andreoni (1995) he presented experimental evidence that people tend to be altruistic for other reasons than a warm glow (or confusion).

6. Of course, one could always define utility to be what individuals maximize. Then individuals would tautologically maximize utility, but, as pointed out by Sen (1987) and Johansson (1997), it is then not clear from any ethical principles why the government should maximize individual utility.

7. The notion "cost-benefit analysis" is unfortunately used with different meanings. In this paper it is used as a monetized comparison of everything good and bad which the government should take into account. However, it may also be used in a more narrow way as a measure of some *economic* goods and bads which the government should take into account. If the latter view is used, it is very important to be clear about this, and also to be specific about what type of relevant values which are not included (and should not be included) in the costs and benefits.

8. The situation would of course be different if the government separately took the well-being of future generations into account in an appropriate way. Then it would be double-counting to include these WTP as well.

9. Whether the CV method as such is reliable has been discussed intensively elsewhere and is beyond the scope of this paper. For example, see Arrow et al. (1993), Diamond and Hausman

(1994), Hanemann (1994), Hausman (1993), Kahneman and Knetsch (1992a, b), Portney (1994), and Smith (1992).

10. However, as discussed e.g., by Vatn and Bromley (1994), in cases when the costs to avoid extinction are large, one will still need to consider the non-trivial issue when the cost of such preservation becomes unacceptably large from a social point of view.

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