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Ethics and Values in Environmental Policy: The Said and the UNCED

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ABSTRACT: While citizens often use non-instrumental arguments to support environmental protection, most governmental policies are justified by instrumental arguments. This paper explores some of the reasons. We interviewed senior policy advisors to four European governments active in global climate change negotiations and the UNCED (United Nations Conference on Environment and Development) process. In response to our questions, a majority of these advisors articulated deeply held personal environmental values. They told us that they normally keep these values separate from their professional environmental policy activities. We interpret these findings within the context of the literature on environmental ethics and values. We suggest that environmental policy could be improved if widely held environmental values were articulated, validated, and admitted into the process of policy analysis and deliberation.

KEYWORDS: environment, ethics, values, policy, intrinsic value

INTRODUCTION

Scholars have observed a rift in environmental policy discussion between experts, who tend to speak in 'objective' language emphasizing empirical data and utilitarian aims, and the public, who often speak and argue for environmental policies using more heart-felt, wider identifying, and ostensibly 'subjective' language that often reveals a belief in the intrinsic value of the environment

(Naess 1986: 504-15; Kempton 1991). While such values seem to be at the heart of keystone environmental legislation such as the Endangered Species Act in the United States, they are rarely articulated in policy debates, even by environmental groups.

Similarly, non-use values were rarely mentioned in landmark environmental planning reports such as the IUCN's *World Conservation Strategy* (1980) and the Brundtland Commission's *Our Common Future* (1987).³ These documents approach the environment from an enlightened self-interest perspective. They emphasize the *use value* of nature for humans, arguing the importance of preserving this use value well into the future through 'wiser use' and more careful stewardship.

When we interviewed people involved with creating such documents and in negotiating current treaties and asked about environmental values, we often heard ethical stances that extended well beyond a stewardship perspective. In fact, the personal views of the policy advisors we interviewed seemed similar to those wider-identifying views found in previous research to be held by the general public (Kempton 1991, Löfstedt 1982, 1993). This leads us to the theme of this paper – that the values and ethics which inspire many people's dedication to environmental concerns should be seen as relevant to policy making. Indeed, this was a recurring theme at the Brazil UNCED Conference.⁴

We interviewed 24 senior policy makers from Austria, the United Kingdom, Sweden, and Germany. These are some of the industrial nations that are taking leading roles in the global climate change debate.⁵ We used anthropological interviewing techniques. All interviews were recorded and later transcribed. An interview protocol was used (available from authors), but answers were open-ended and encouraged substantial elaboration. Interviews were scheduled for one hour, but many lasted longer as interviewees often wished to further elaborate and suggested continuing. As with most interviewing at the level of senior advisors to governments, this was not a 'random' sample, and we do not compute statistical indicators from the interview data.

ENVIRONMENTAL VALUES

Our interviews opened with background questions and general questions about familiarity with global climate change.⁶ Two questions were particularly productive in eliciting personal and national environmental values, the primary focus of this paper. We asked:

Q: "Do you have environmental values?"

and

Q: "How would you describe those values?"⁷

These questions would almost always generate a pause for reflection, then an often eloquent response.⁸ Some said that we had asked a fundamental question, but one virtually never raised in professional policy activities. One person responded:

A: “Well – how difficult. – I don’t think I’ve ever had to describe a value.”

but then went on to do so with clarity and insight [EC11:9].⁹

The chance to reflect on the meaning of his work led one interviewee to actually thank us for interviewing him and to comment at the end of his interview – to our surprise – “Now I understand why I’ve been working so hard on these problems.”¹⁰ This and other responses led us to conclude that we were touching heart-felt values, not merely triggering standard responses.

The interviewees perceived environmental values issues as personal, not abstract. Many responses appeared to originate from a great inner depth, and conveyed significant prior contemplation. For example, when we asked a Swedish official if he had environmental values, he replied:

A: Oh yes, definitely. Very much. Very much. I would say that my first value is to [apply] the precautionary principle which we have been fighting so much about.¹¹ But to apply it **much**¹² more rigorously than it is being applied ... Personally I’m willing to sacrifice quite a lot of my material [well being] in order to protect the environment. [EC16a:8]

This official felt tension between his personal values and his responsibilities as a public servant and a member of his political party.

A: As a government official of course, I’d have a much more balanced view than as an individual person. I certainly realize there has to be a balance between the economic interests and the environmental interests... Actually it is politically unthinkable to sacrifice material well-being in Sweden. It’s something we people want, and we have to be nationally competitive... Within that formula there are of course enormous possibilities for protecting the environment. [EC16a:8-9]

Similarly, a British Department of Environment official replied that she had environmental values, but: “They aren’t supposed to come through in my work.” [EC01:4] A Treasury official, who did not work primarily on environmental issues, was more direct: “We try to give good economic advice rather than taking a bias on nature. We’re not attempting to build any of our values into that at all.” [EC09A-a:5]

When we asked a German environmental official “*Why would you say that environmental protection is important?*”, she responded with a carefully crafted, three part argument that clarified her personal views on the value of nature while conveying a well-tempered awareness of the complex of issues associated with trying to mitigate environmental degradation:

A: [Y]ou can’t answer that question with one small and short sentence. [First, there are]

a lot of immediate problems. [Y]ou can see [from] East Europe that if you ignore the ecological impacts – [by] very egoistic and [immediate] economic oriented argumentation – you destroy your economic basis¹³... Not only the macroeconomic, but also the microeconomic costs of neglecting ecological concerns is very high. [Better accounting of costs] is one traditional way of [arguing for environmental protection]. [EC19a:8]

The second [perspective], which is perhaps more long term oriented, is the global, the political, and the social point of view... In the third world we have an increasing number of catastrophes that are caused by neglecting the local natural situation: desertification, ... [flooding in] Bangladesh, ... and erosion problems in mountain areas. And I know from the newspapers that California, perhaps in the future, will not ... be the agriculture paradise that it was... [The catastrophes happen] because of neglecting ecological issues and thinking that technological innovation is able to deal with everything. [EC19a:8]

The last point – and that is my personal feeling – [is] that mankind has not a right to exploit nature and natural resources to the extent we [have been] doing... [for] the last 100 years or perhaps more... Bio-diversity for me has very, very high value. It has a value in itself, from my personal [view], and also [from my] political and philosophical points of view. [I value] the rarity of not only opinions and things like protection of minorities,... [but also] protection of species. [Without this,] we will come to a very poor and one dimensional world. Aesthetics and beauty of life is dependent on a variety of landscapes, of animals and so on. That's my personal point of view.¹⁴ [EC19a:8]

The personal perspective conveyed in the last point may be placed in a long historic context. Well over a century ago in *Principles of Political Economy*, John Stuart Mill wrote:

It is not good for man to be kept perforce at all times in the presence of his species... [T]he presence of natural beauty and grandeur is the cradle of thoughts and aspirations which are not only good for the individual, but which society could ill do without. Nor is their much satisfaction in contemplating the world with nothing left to the spontaneous activity of nature; with every rood of land brought into cultivation, which is capable of growing food for human beings; every flowery waste or natural pasture ploughed up, all quadrupeds or birds which are not domesticated for man's use exterminated as his rivals for food, every hedgerow or superfluous tree rooted out, and scarcely a place left where a wild shrub or flower could grow without being eradicated as a weed in the name of improved agriculture. (Mill 1848: 111)

Mill's position was mirrored by an advisor to the Austrian government who advocated identifying more widely with all life forms:

A: I believe that humanity is a beneficiary and a guardian of nature at the same time. It's a double function. It's benefiting [from] nature, but it is also protecting nature. Not only for the sake of humanity but also for the sake of nature itself. [EC2:4]

Not all interviewees answered with such clarity.¹⁵ However, many advisors emphasized the ‘intrinsic value of nature’; the intuition that non-human life has value in itself. Such a realization often leads to a normative prescription; that the well-being of non-human life must be considered along with our own. Such views require that conceptions of value be expanded beyond narrowly defined use-value to include a wider sense of the values in nature; values which are often independent from human purposes. These views frequently associate a certain magic and sacredness with nature’s richness and diversity. Nature is more than *merely* a means to achieve human ends.

We are struck by the contrasts between our interviews, in which our questions probed fundamental values, and what is found in many professional environmental planning documents. Intrinsic value and issues of multiple and incommensurable senses of value are rarely considered relevant to policy. When they do appear it is with the idea of either (a) dismissing them as either too difficult to quantify and therefore are not useful for policy analysis or else (b) as being readily integrable into existing tools such as the contingent valuation techniques of economics. As the economist Herman Daly remarked:

...the intrinsic value of other species, their own capacity to enjoy life, is not admitted at all in economics, and their instrumental value as providers of ecological life-support services to humans is only dimly perceived. (1991a: 236)

Economics is a key tool for policy analysis in every area. All our interviewees had some familiarity with and generally strong opinions about economic techniques, and quite a few had formal training in the area. Economic values proved one of the most fruitful areas in our interviews.

VIEWS OF THE ROLE OF ECONOMIC ANALYSIS

Most interviewees recognized the importance of economic tools, but they were also concerned about some of their limitations. A German economist working on global climate change with the Enquete Commission of the German Bundestag¹⁶ expressed the problem this way:

A: If I were answering as an economist I would have a very different answer than my personal one... [An economist] would say, “What’s the value of nature?” If people won’t pay money for it, then they don’t really value it. And so you might say that we don’t want all these species to die, but if a few species die it really doesn’t affect people. If you ask the average consumer if they’re willing to pay more for products in order to keep two or three species from dying, they’ll say that they’re not, therefore it has no value. [EC14-5]

Q: *That suggests that value is defined by what people are willing to pay for an item.*

A: Well, that's the way an economist defines value, but I don't agree with that myself. [EC14a:17]

We note that a whole sub-field of economics is seeking better ways to include non-market values in economic analysis. The 'contingent valuation method' attempts to measure quantitatively the value of non-market goods by asking consumers what they are willing to pay for a cleaner environment, prevention of species extinctions, etc.¹⁷

This point also came up as a Swedish scientific advisor spoke about discounting the future. We pointed out that an economist might argue that sound decisions require applying discount factors to future costs. Since the time periods are very long when one considers intergenerational equity, for instance, the future does not weigh heavily in today's planning. He responded:

A: I know... That is theoretical... But the world is finite. When you exploit natural resources – those are limited. I know that some of it is limited because of the cost increase and it's not truly physically limiting. Nevertheless, that's not to be ignored. What the economists say is that the free market and the optimal use today is best for the future. But why is that so? That's an hypothesis based on [the idea] that if you exhaust [resources] there are other replacements [that will] do equally well or even better. That's an axiom that they base their arguments on. I don't accept that because of the finiteness of the world. [EC12:6]

This advisor believes basing environmental decision-making upon such hypotheses may be unwise even from an instrumental value perspective. He expressed optimism about a recent movement towards incorporating more realistic assumptions into economic analysis:

A: There is an emerging [field] of ecological economics which is most interesting and addresses these questions. I'm sorry to say that ninety percent of economists just don't know about it. Out of ten, I would say that probably nine think it's silly. This will change over the next decade. I'm absolutely convinced. [EC12:6]

A German official in the environmental ministry put the matter far more sharply, expressing pessimism about the scope and influence of economics:

A: [Economics] is one of these disciplines... that is the most influential because it is so simple and simplistic,... even the most stupid person can understand it... If you don't change [the] influence of this sort of science then it will be very difficult to [achieve change].

Q: *You're saying if we don't change economic science, it's going to be hard to formulate good policy because economic science is so influential in policy?*

A: Yes. [EC19b:1]

Another German advisor expressed concern over the abstraction of value, calling the empiricism of economics artificially narrow:

A: The empiricism of economists... This deprivation of the human sense... The more you put the problem off to later generations, the cheaper it is for us today. This is a perversity... If you have waste problems in... ten thousand years, they cost us nothing? This cannot be right. [EC17]

We then challenged him, asking how he would decide, as an economist, in which situations discounting is appropriate:

Q: *If you took a job for a firm and you were asked to evaluate investment decisions... you would advise the firm as an economist that you're better off with the nearer return because the net present value is greater. As an economist you would make such a recommendation. So how do you distinguish these two cases?*

A: You can't compare these kinds of systems. You can't compare apples with [oranges]. In one case, the damages are repairable if you want. In global warming we don't have any idea what later generations can do against it. It's a problem of a new quality. We know the problem will be huge and really economically expensive. [We lack] the instruments [to deal with] this huge problem. [EC17]

COLLAPSING MULTIPLE SENSES OF VALUE INTO A SINGLE NUMERAIRE

These advisors are expressing concern over the in-built tendency for economics to obscure both the distinctions and linkages between natural capital (environmental resources and services), human-made capital (that which we produce from natural capital using technology and labour), and cultural capital (the dynamic stock of information, values, and intuitions that shape how we choose to modify and 'manage' natural capital).¹⁸ Economics, because of its high level of aggregation, makes it nearly impossible to assess the 'costs' and extent of reversibility of transformations between different forms of capital. Reliance upon a highly abstracted, single attribute sense of value – money – inexorably leads to decoupling from both physical reality and human values.

Interviewees expressed concern over the possibly irreversible and highly uncertain consequences of our prior and current economic activities. An essential concern is that those things which do possess intrinsic value, once lost, cannot be re-created. They say that money and technological ingenuity cannot bring them back. Even if restoration ecology existed as a highly developed science, restoration would not always be possible. A lost species is an obvious instance. Once lost, money and technological ingenuity cannot bring them back.

We find it useful to place these views in contrast with an example of leading

work on techniques for achieving economic sustainability. The work of Pearce and his collaborators (Pearce 1988, 1989a, 1989b, 1990, 1992; Barbier, Markandya and Turner 1990; Turner 1992, 1993) provides an important interface between neoclassical economics and considerations of environmental sustainability. We were told that *Blueprint for a Green Economy*, a report by Pearce and collaborators prepared in 1989 for the UK Department of the Environment was important in the formation of British environmental policy. For example, an academic policy advisor told us that

A: The Pearce report really outlines how you could start tackling environmental problems through the pricing system... So that was really the point in which Mrs. Thatcher started to turn around and make pro-environmental type statements. [EC08:11]

Pearce and Turner's approach does, however, reject the concept of intrinsic value:

If inherent/intrinsic and not just instrumental value exists, what is it and how do we discover it? It seems reasonable to conclude that we either justify our acceptance of intrinsic value at an intuitive level only, or we look for support via appeals to 'expert judgment.' Both of these forms of justification seem problematic. (Pearce and Turner 1990: 238)

Rather, to establish an economic justification for environmental protection, they argue that all relevant multiple senses of value can be incorporated into existing tools:

We have seen that the passing-on of the resource base 'intact', i.e. constant natural capital stock K_N , over the next few generations is central to the concept of sustainable economic development. Such a managed growth policy, although directed primarily toward the satisfaction of human needs, would also necessarily ensure the survival of the majority of non-human nature and its natural inhabitants. Adequate environmental safeguards are available therefore without the need to adopt any of the radical 'deep ecology' arguments and ethics. In particular it is not necessary to have to accept the notions of intrinsic value in its widest sense, or of equal rights for all species. Our sustainability principle is general enough to encompass the environmental ethical concerns of consequentialist philosophy, as well as meeting the intergenerational equity objective. (Pearce and Turner 1990: 238)

The core idea underlying Pearce and Turner's 'sustainability principle' is the hypothesis that there exists in principle a scalar quantity, K_N which completely characterizes the 'natural capital stock'. They argue that keeping this single numeraire constant will ensure that both human and non-human life will thrive.¹⁹ While the symbol is clear enough, the procedure for operationalization is anything but. Why should it be assumed that a *single scalar* quantity for measuring natural capital stock exists? In what units, and over what time horizon

should it be defined? How is one to include the functional integrity of ecosystems? Of more theoretical and philosophical concern, however, is this approach's dependence upon 'compensating projects' to mitigate the negative environmental effects of the other projects in the programme. Such an approach still allows whole ecosystems to be annihilated as long as the net 'natural capital stock' is maintained.

As noted above, because different forms of capital are not fungible, our accounting and analysis must distinguish between natural, human-made and cultural capital. Pearce and Turner's reliance upon a single monetized value unit, 'constant natural capital stock,' obscures distinctions of this sort.²⁰

Our interviewees are of course not alone in their reservations of attempts to reformulate economics that do not incorporate more realistic assumptions and deeper values as a means to direct the reformulated analytical machinery. The philosopher Andrew Brennan is dubious about attempts to reformulate economics by using a single, all inclusive attribute unit:²¹

Since some... forms of value will forever elude quantification, it would be folly to set up a single order of values, or of corresponding preferences. Much though economics may like to present itself as a rational discipline, commitment to a single order of values and of preferences would be quite the opposite of rationality... Yet this is precisely what is attempted by those economists who aim to include all values in their calculations. They are pursuing a phantom; for however hard they try, there will be values which forever elude them. (Brennan 1992: 20-1)

These tensions are not limited to the realm of abstract concepts. They show up in the practical world of the policy advisor. In one interview the confusion about the utility of traditional economic tools was particularly clear. An economist familiar with the work of Pearce, showed his confusion and frustration in trying to reconcile his economic training with the needs of his job. He began optimistically, but almost at once expressed reservations:

A: Economics offers a lot of very powerful techniques for saying which is going to be a more costly path between two alternatives. But in some cases there seem to be other factors that enter that aren't really easily quantifiable. What's the value of a species, or of transboundary pollution?... We've been thinking very long and hard and deep about these issues... We do find it extremely difficult to invent a structure of analysis and to put the numbers into the framework, including the economic values... [EC9A:7]

We asked this economist about intergenerational equity. His response started with cost/benefit analysis, but then turned to its difficulties:

Q: *Can you indicate the kinds of techniques that you're using for thinking about these long term inter-generational issues?*

A: The very broad frame work in which we're working is cost-benefit analysis. Where one is setting up structured analysis and calculating all the costs and benefits and quantifying and valuing everything that you can. But in practice it is... extraordinarily difficult to do...

What we often aim for is some sort of intermediate exercise where you measure or quantify as much as you can and you value as much as you can, but you recognize that you can't add up apples and pears necessarily, because you can't actually get the values.

We've discussed inter-generational issues [too]...One of the jobs we have to do in the Treasury is to set a discount rate for calculating the present values...We have essentially adopted the traditional economic frame work, I think it's fair to say. But I would be pained to say that when decisions were presented to politicians... we should not tie up in a single number all the economic... assumptions. I quite see why...politicians might want to make different decisions about...the impacts of different policies on different generations.. [EC9A:7]

He recognized the tension between his training and his job requirements:

A: These are... decisions which are bigger than economics actually. They do raise philosophical discussions... my own view is that... it's very hard for economists not to want to discount... I think nearly everything points in favour of some sort of belief that the future is worth less than the present...[However] I don't know a paper that's ever got to administrators which had to use discount rates over fifty years.

Our economics research council is currently financing a program of research on global climate change... quite interesting – it comes to the conclusion that you shouldn't discount actually. The case for discounting is weak...[Our] training leads us to be terribly suspicious of that sort of argument of some intrinsic value. But that's the way we look at these things...

We then asked about intrinsic value. He began by framing the question in terms of marginal costs, but began to recognize the problems with this approach:

A: I would tend to regard [the discussion over intrinsic value] as a confusion between... total utility and marginal utility – that is between... some notion of the overall worth of a thing and... what factors actually determine the price of the thing.

[T]he classic case is water. Water is obviously intrinsically a very valuable thing but at the margins it is highly plentiful in some areas of the world. So it's value has actually gotten small because of the margin... Additional water is not terribly valuable.

...We have all of these millions and millions of species and what is the value of the additional species? Or losing one species when you now got only 2,999,999 etc. of the species to go. That's the kind of question I would ask. That's why I say suspicious... We really put an infinite value on these things... People do implicitly value things even if they don't like doing so... There comes a point where just about anything becomes too expensive for people to accept.

Q: *You mean, if it's value isn't zero and if it isn't infinite, then there must be some number.*

In apparent frustration, he gave up on a price-oriented approach and turned the problem over to the political context.

A: Yes, yes. I'm not saying economists can necessarily arrive [at a price], but the political process will arrive at it. And clearly you... are, it seems to me anyway, talking about things which are bigger than economics... I don't think economists should pretend they've got the answers [for] absolutely everything. [EC9A:7]

He was clearly having problems distinguishing between basic assumptions and technique. This, we believe, is a systemic problem. However, not everyone we interviewed had such difficulty. One journalist for a major UK business newspaper with a graduate degree in economics had a clear grasp of the limitations of economics:

A: Economists typically feel more comfortable with things which the market puts a price on. The market will tell me exactly what this tape recorder you are using is worth... But the market cannot tell me what it's worth to have the panda still on Earth, in existence. I mean there's a price in which people would buy a panda, but that's something rather different. Nor can it tell me what I'm prepared to pay for the continued, healthy, existence of my children or for this lovely view out here, or lots of other things... most of the things we most value are actually the things that the market doesn't put a price on. And the environment is often about those things. [EC11:6]

The difficulty economists experience in including values is perhaps akin to that to which Herman Daly refers in the introduction to the second edition of his book *Steady State Economics* (1991). Daly quotes from Daniel Raymond's *Thoughts on Political Economy* (1820). Raymond, an early American economist, was explaining why he omitted consideration of the then current ideas of Malthus:

Although [Malthus's views are] ... founded upon the principle of nature, and although it is impossible to discover any flaws in his reasoning, yet the mind instinctively revolts at the conclusions to which he conducts it, and we are disposed to reject the theory, even though we could give no good reason. (Daniel Raymond, quoted in Daly, 1991b: xi)

VALUES IN ENVIRONMENTAL POLICY

How, then, is one to think about incorporating these varied and wider senses of value? There is no single way, but there are means to gain insights. A Swedish advisor to the IPCC suggested the complexity of such an endeavour:

A: [We have] a responsibility to nature itself, too, to try to let all different types of animals and other live things flourish, and increasingly [we have responsibility] to people in the third world. [EC14:5]

An Austrian diplomat echoed and expanded upon these concerns:

A: For me it's one system... I see it as an integrated system. Therefore, I would not undertake to separate [it], because then it gives the wrong perception to the people... First of all, as part of the system, you have... [a] responsibility to keep the system up. It's your share. It's your share because you are part of the system... Second, as part of the system humanity has much more [impact] than any other part of nature on the system. [Our] responsibility [has] two aspects. The one is a service part of the system. The other... [is] to keep up the possibility for evolution to go on... That is also a philosophical answer,... to keep up the possibility that evolution takes place. [EC-3]

The philosopher Mark Sagoff expresses a similar outlook, conveying the magnitude and importance of such a realignment of ethics and policy:

Our environmental goals – cleaner air and water, the presence of wilderness and wildlife, and the like – are not to be construed, then, simply as personal wants or preferences; they are not interests to be 'priced' by markets or by cost-benefit analysis, but are views or beliefs that may find their way, as public values, into legislation. These goals stem from our character as a people, which is not something we chose, as we might choose a necktie or a cigarette, but something we recognize, something we are. (Sagoff 1988: 28)

Sagoff points out that attempts to shadow-price public values as externalities results in the creation of a category error. He argues that preferences are inherently quantifiable and hence amenable to comparison through numerical techniques like optimization and rank ordering. Ethical values, however lie deeper and elude quantification. The word 'value' is used here in two entirely different ways. The concepts are of different logical types.

Is it a matter of principle, not merely of methodology, that the beliefs and opinions of citizens are usually listed and treated separately from their consumer preferences? Is it a logical or conceptual truth, in other words, that ideas or convictions that can be supported by reasons in the political process are to be considered by the decision maker as different from consumer wants and interests that may be satisfied in markets? If so, if the limitation is logical, if political and ethical debates are conceptually different from economic analysis, then we must infer that efforts to shadow-price 'intangible' or 'fragile' values must fail – not for any technical or empirical reason but because they rest on a logical mistake. (Sagoff 1988: 92)²²

A political advisor to the Swedish government indirectly reflected this kind of tension in language that he told us he would never imagine using in an official document.

A: [This is] a great dilemma for me. Certainly I realize that the market system [is] best in order to achieve an efficient production. Increased trade between nations is also very important in order to reach a good material standard. The competitive advantages of free trade is certainly crucial and that is one of the main features of the market economy... **But** on the other hand, the whole idea behind the market economy is to increase the consumption of materials all the time. That is very much contrary to my values. Certain aspects of the market economy are fantastic. Another aspect is working completely contrary to my personal views. And I can't resolve this. I'm probably desperate. I don't know what to do. I can't find a system which could combine the good aspects of the market economy system but not have this bad aspect, which is the consumerism... It is difficult, very difficult. [EC16a:9]

Another talked of the need for a comprehensive approach for integrating wider values with tools and policies.

A: But... mankind is one part of an ecologically whole system... We had in the late seventies and early eighties a very interesting research [project] concerning changes in the [perception] of ecological problems within our population. In the early seventies when you asked people what was the major ecological problem, people said waste or noise. These were problems that they were personally concerned [with]. They could see and touch and hear [them] In the late seventies and in the eighties the answers were totally different. People said [they] are afraid of the chemicals, of those things that you can't see that are everywhere... They were more and more aware of the fact that... those problems that are not immediately to be seen are perhaps more important than those that are at the moment on the agenda. [19a:8]

We do not want to leave the impression that all advisors consciously think in terms of intrinsic value, nor that all believe economic analysis is seriously flawed as a tool for dealing with the long run. For example, one British industrial executive was dubious about preservation:

A: [People] often see things at a much too local level... People live close to it and they value that local environment more than the sorts of benefits that would come to the global environment... If we look at the UK landscape... the whole of [it] is man made. There's no **natural** landscape here. It seems to me to be rather hard to want to preserve everything. [EC8:5]

There is much he loves about the UK landscape, but he recognizes the enormous impact of humanity on it over millennia, and finds continued intervention both inevitable and often desirable. In contrast, the environmentalists we interviewed recognize the role humanity has played in changing the environment, but are disturbed about the pace and form of change that exists today. We interviewed no environmentalist who "want[s] to preserve everything". It is of course commonplace for members of different groups to have distorted images of each other.

NAESS' WORK ON VALUES

This disjunction between values and theory has also been addressed by the philosopher Arne Naess (1986, 1989). Our findings are in agreement with his work. Naess conducted systematic interviews with so-called 'ordinary people' on the rights of animals, plants, and landscapes, and on their intrinsic value.

In spite of what one would guess from the way they vote (and I am speaking as a Scandinavian) there is a substantial majority with quite far-reaching ideas about the rights and value of life forms, and a conviction that *every life form has its place in nature* which we must respect. (Naess, 1986: 508)

These individuals expressed the feeling that the so called environmental 'experts' had deserted them; that these experts resort to narrowly utilitarian practices in supporting current environmental policies.

To examine this belief Naess sent a detailed personal letter to 110 people who influence national environmental policy in Norway, to clarify their environmental values.²³ He asked for their comments on a series of eight statements that begin with a fundamental premise which declares the inherent value of nonhuman life forms and states that this value is independent from its usefulness for human purposes. One in three environmental experts replied. They answered in a very favourable manner, suggesting that at least on a personal level they are much in line with Naess's 'ordinary people'.²⁴ The results of Naess's interviews are strikingly similar to our own interviews. To develop concrete policies which are more in-line with fundamental values Naess asserts that:

What is needed is a methodology of *persistently connecting basic value judgments and imperative premises with decisions in concrete situations* of interference or noninterference in nature. What I therefore suggest is that those who are thought to be experts and scientists repeatedly and persistently deepen their arguments with reference to basic value judgments and imperative premises. That is, they should announce their normative philosophy of life and discuss environmental problems in their most comprehensive time and space frame of reference. (Naess 1986: 510)

In our conclusions, we relate this injunction both to the interviews and to the process of undertaking this research.

CONCLUSIONS

Senior environmental policy advisors to several European governments told us that they hold deep environmental values, which quite often go far beyond instrumental value. While by no means all the advisors we interviewed hold such values, enough of them did that we are persuaded that deep environmental values are widely held – and consequential. However, the predominant policy process

at the national and international level routinely fails to acknowledge such values.

Instead, analytical tools are used which are often asserted to be value-neutral, but are not. In our view the problem of embedded values occurs in every area, but the problem is especially severe with techniques that rely heavily on mathematization – particularly in the field of economics.²⁵

All too often even those who employ such techniques are unaware of embedded values and implicit category errors. We are greatly encouraged that many of the policy advisors we interviewed have a clear understanding of these matters. Unfortunately, some do not. Unfortunately too, institutional pressures can and do lead to conflict between personal values and work.²⁶ Many of the interviewees stated that institutional pressures forced them to separate and sublimate their personal environmental values to satisfy institutional constraints. Such discord has often resulted in the generation of schizophrenic environmental policies – policies which stem from a severe mismatch between evaluation tools and policy instruments. Individuals, society and the environment are the worse for that.

Naess has recommended that we learn to incorporate fundamental values explicitly into environmental policy analysis and decision-making frameworks. We concur. Indeed, if the research we report here is any guide, a movement toward explicit recognition of values in the policy process would be as welcome to policy advisors as to the general public.

Lastly, we are encouraged as we see signs that explicit recognition of the relevance of environmental values is becoming more widespread. This occurred at the Brazil UNCED Conference – especially in the meetings of the NGOs (non-governmental organizations). Legitimation of environmental value would have several positive effects. Members of the public would likely become less reticent about expressing their motivations. Policy advisors and politicians may then feel more comfortable articulating such values. These changes could lead to deeper examination of the values which are embedded in analytical tools, and the articulation of these values when these tools are used in policy evaluation. Such recognition could help to avoid falling into ‘social traps’ (Platt 1979, Cross and Guyer 1980, Costanza 1987) which lead to situations in which decisions based on short-term goals and narrow interests lead to longer term outcomes desired by no one.

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NOTES

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² Department of Civil and Environmental Engineering

³ This absence does not mean that the authors of these reports never contemplated non-use environmental values nor discussed them among themselves. We know only that, whether for reasons of custom or pragmatic political strategy, they did not incorporate such values into their primary arguments. We return to this point later in the paper.

⁴ Our work was in fact originally motivated by the prospect of the UN Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil, in June 1992.

⁵ Interviewees were selected using networking among individuals involved with the Intergovernmental Panel on Climate Change (IPCC) and with preparations for the Rio de Janeiro UNCED conference of 1992.

⁶ The complete set of interviews covered scientific, institutional, political, and ethical topics. In this paper we limit our discussion to environmental values. Other findings are reported elsewhere (e.g. Kempton and Craig, 1993).

⁷ "Q" indicates our question; "A" denotes the interviewee's response.

⁸ Such responses were generally phrased in language that emphasized personal association, acquaintance, and insight rather than abstract or theoretical knowledge. The Philosopher Arne Naess characterizes this usage as the language of "spontaneous experience" (Naess 1986: 512).

⁹ These identifiers refer to the informant number and page location of the quotation in the interview transcripts. Numbers are used in place of informant names to preserve the confidentiality of interview responses.

¹⁰ Unlike all other quotations in this paper, this is a paraphrase – this remark was made after the tape recorder was turned off.

¹¹ The precautionary principle asserts that it is worth some effort or investment to prevent possible environmental damages, even in the absence of absolute certainty that the damages will occur. An analogy is purchasing insurance. The precautionary principle is often contrasted with a 'no regrets' strategy, in which actions are pursued only if they have

sufficient other benefits that they would be worth doing even if there were no threat of environmental damage. Of the two, the precautionary principle is regarded as the stronger environmental position.

¹² Bold text in quotations from interviews indicates verbal emphasis by the informant.

¹³ Several interviewees used the term 'egoistic behavior' to illustrate this disjunction between wider values and narrow self-interested materialism. We had not seen this term used in environmental value discussion in the United States, and asked for clarification. She replied:

The egoistic point of view. I want to express by this ... the [emphasis on] short term benefits in monetary terms. So you can calculate. You pay this and your income is that.

This is the egoistic, the materialistic approach. [EC19a:8]

¹⁴ Note that she also distinguishes questions of value as "my personal point of view", implying that these values should not enter into official decisions.

¹⁵ For example, one UK official didn't respond to our question about environmental values. We then asked "*Does that question make sense?*" He said "I'm not sure it does." With further prompting, he told us:

On the personal level, ... we all want clean water to drink and we want a fairly tranquil home life .. We all get a bit tired of pollution from traffic ... we all like pretty scenery, clean air. So if that's what you mean by environmental values, then I suppose everybody instinctively is in favour ... [EC07A-A: 6]

Responses to our question on 'environmental values' in narrow terms of personal conveniences were rare. Even in this case, evidence from other parts of the interview suggest he may have simply misunderstood the question. One obvious question is whether our interviewees were giving us 'canned' answers, telling us what they thought we wanted to hear. Indeed, when we presented the major conclusions of this paper at the Second Conference of the International Society for Ecological Economics, Stockholm, September 1992 this was a recurring question. While this interpretation is of course possible, we find it compelling that a significant majority of advisors responded so eloquently to these questions, while others failed to make contact with them.

¹⁶ In October 1987 the German Bundestag (German parliament) established a study commission on "Preventative Measures to Protect the Earth's Atmosphere". This top-level committee, known as the Enquete Commission, was comprised of scientists and members of the Bundestag. It held weekly meetings, reviewed extensive scientific evidence, and issued several detailed policy reports (see Bundestag 1989).

¹⁷ In contrast to this interviewee's claim about the unwillingness of the public to pay, numerous studies show that the public routinely states that they are willing to pay substantial sums for preservation. See for example Goodland (1990), Loomis (1986), McNeeley (1988), or Mitchell and Carson (1989).

¹⁸ These distinctions have been clarified in a very clear and precise manner by Berkes and Folke (1992: 2):

- *Natural capital* – Consists of three major components: (1) non-renewable resources, (2) renewable resources, (3) environmental services such as maintenance of the quality of the atmosphere, climate, operation of the hydrological cycle including flood controls and the drinking water supply, waste assimilation, recycling of nutrients, generation of soils, pollination of crops, provision of food from the sea, and the maintenance of a vast genetic library [among other things].
- *Human-made capital* – is capital generated via economic activity through human

ingenuity and technological change; the produced means of production.

- *Cultural capital* – refers to the factors that provide human societies with the means and adaptations to deal with the natural environment and to actively modify it. [It includes: traditional ecological knowledge, social/political institutions, religion, philosophy and ethics, scientific/technical knowledge, cultural diversity, and ontology/cosmology; in short, it is contains the wealth of information and intuitions that enable us to develop our perception of the world as well as how to act in the world.

¹⁹ Pearce and collaborators accept that many natural resource functions cannot be substituted by man-made capital (Barbier et al. 1990: 1260) yet they persist in their belief that the cost-benefit analysis (CBA) should be maintained. They argue that alternative objective functions can be chosen which ‘extend’ the CBA framework beyond economic efficiency. In a forthcoming article Turner and Pearce even argue that ‘moral’ and ‘cultural’ capital can be incorporated into CBA (Turner and Pearce 1993). For economic sustainability considerations to be addressed the economic efficiency (positive net benefits) criterion is modified with an additional constraint that requires zero or negative natural capital depreciation. This approach is not intended for the evaluation of single projects; it is oriented towards evaluating an array of projects at the programme level. Pearce and collaborators posit a ‘weak sustainability’ criterion which aggregates in the time dimension, only requiring the sum of individual damages to be zero or negative (i.e. the present value of the sum of environmental damages is constrained to be nonpositive). A ‘strong sustainability’ criterion is also proposed which constrains the sum of environmental damages to be nonpositive for *each* time period. Thus, sustainability considerations are integrated into the CBA through the concept of shadow, or environmentally compensating, projects (Barbier et al. 1990: 1260-1).

²⁰ Pearce and Turner do, however, at one point, hint at this need: “The long run survival of human society [also] depends on certain functional requirements that are met by a set of social norms (i.e. principles of behavior that ought to be followed). Over time, such norms must be consistent with the natural laws governing ecosystem maintenance if sustainability is the accepted policy goal.” (1990: 226)

²¹ Brennan’s article represents an appeal to consider the limitations of economic rationality in general and cost-benefit analysis, in particular. He questions the feasibility of quantification or measurement. He argues that the commensurability assumption, which takes as a given that all forms of value can, in principle, be assigned a single attribute unit and compared, cannot be validated. He also discusses the issue of ‘transformative’ value, the capacity for our preferences to be altered, over time, by new experiences. Brennan argues that transformative values, which can be associated with living things and systems, are nearly impossible to account for within the economic paradigm (Brennan 1992: 20). Mill, in the quotation we cited earlier, was referring to just this sense of the transformative capacity of nature.

²² Sagoff’s point here is that trade-offs necessarily exist in the policy process. Making policy decisions involves values along with preferences. Sagoff contends that because the economic framework purports to incorporate preferences only, remaining ‘value neutral’, it must be inherently incapable of addressing all elements crucial to the decision process.

²³ The letter asked these Norwegian environmental experts to comment on their feelings and level of agreement with the 8 platform statements of deep ecology (DEP). The letter also consisted of over two pages of additional commentary clarifying and elaborating upon the platform statements. For a detailed discussion of the DEP, with additional commentary by Naess and Sessions, see Devall and Sessions, *Deep Ecology: Living as*

if Nature Mattered, 1985, pp. 70-3. An almost identical restatement of the DEP occurs throughout Naess's work. For example see, Naess and Rothenberg, *Ecology, Community and Lifestyle*, 1989, pp. 29-31 (Statements four and five are reversed in order and minor changes in phraseology occur throughout) and Naess 1986: 509-10.

²⁴General agreement with and wide acceptability of the 8 platform statements has been shared by others outside of the deep ecology movement. Daly and Cobb, in *For the Common Good*, p. 378, explicitly state their acceptance of intrinsic value in their discussion of the 8 platform statements: "We find ourselves in basic agreement with the principles of deep ecology as thus formulated."

²⁵This point regarding the disjunction between values and mathematization was made quite forcefully in a recent article by Partha Dasgupta (1992).

²⁶While we acknowledge that the exclusion of intrinsic value from public documents may also be the result of a pragmatic political decision, we feel this is unlikely. In any, case we concur with the majority of our interviewees that such environmental values should enter explicitly into the policy process. The role of argument and persuasion in the policy process has been thoroughly discussed by Majone, 1989.

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