available at www.sciencedirect.comwww.elsevier.com/locate/ecolecon

Deliberative monetary valuation (DMV): Issues in combining economic and political processes to value environmental change

Clive L. Spash

CSIRO, Sustainable Ecosystems Division, GPO Box 284, Canberra, ACT 2601, Australia

ARTICLE INFO

Article history:

Available online 6 April 2007

Keywords:

Environmental values
Citizens' juries
Social costs and benefits
Stated preferences
Value articulating institutions

ABSTRACT

This paper explores and contrasts the different social processes of valuation now appearing as economic means of valuing the environment. Monetary valuation via stated preference approaches has been criticised for assuming well formed and informed preferences and excluding a range of sustainability concerns such as rights, fairness and equity. Deliberative monetary valuation (DMV) in small groups is a novel hybrid of economic and political approaches which raises the prospect of a transformative and moralising experience. Critics of standard contingent valuation approaches have advocated this as offering a way forward. However there has been a lack of clarity as to the means of obtaining values, the expected outcomes and their role. Moving to group settings of deliberation raises concepts of social willingness to pay and accept which are distinct from an aggregate of individual value, although this does not seem to have been widely recognised. A new classification of values is presented appropriate to the literature trying to merge economic and political processes. Values associated with the individual may be exchange values, charitable contributions or fair prices, while social values can be speculative, expressive or arbitrated. The use of DMV is shown to result in different values due to variations in the institutional setting and process of valuation.

Crown Copyright © 2007 Published by Elsevier B.V. All rights reserved.

1. Introduction

Economic valuation of the environment, by extending a market based theory, has run into a series of critiques and problems. Stated preference methods are heavily employed in the type of value transfer work informing ecosystem valuation and green accounting. Yet, primary studies have been the subject of considerable controversy within economics (e.g., Hausman, 1993; Knetsch, 1994; Gowdy, 2004; Vatn, 2004; Knetsch, 2005) as well as on grounds of their political characteristics (Sagoff, 1988a), inherently narrow philosophy of value (O'Neill, 1993; Spash, 2000b; Aldred, 2006), and poor representation of human psychology (Kahneman et al., 1999; Kahneman and Sugden, 2005; Spash, 2006). Value transfer methods are themselves, independently of the primary

studies, subjects of serious criticism in terms of their reliability, accuracy, theoretical consistency and validity (Spash and Vatn, 2006).

Such concerns have led to calls for and exploration of alternative approaches (Martinez-Alier et al., 1998; Spash et al., 2005; Spash and Vatn, 2006; Stagl, 2007). Emphasis has been placed on quality in the social process of valuation (Funtowicz and Ravetz, 1990; O'Connor et al., 1998). Participatory, inclusive and deliberative fora have been seen as a direct way of avoiding environmental cost-benefit analysis (CBA) while aiding management decisions and policy design with the hope of broadening democracy (Spash, 2001a). That is not to deny that political alternatives have their own problems. They are advocated as open processes, which encourage discussion and argumentation, often explicitly involving vested interests, and

E-mail address: clive.spash@csiro.au.

as a result the outcomes are far from certain. The openness of outcomes is seen by many as an advantage in terms of developing lateral thinking, but may be regarded as a disadvantage within organisations whose aim is to close down decisions, choose options or validate pre-existing positions. One way forward now being offered as “the best of both worlds” is to combine CBA with participatory methods as deliberative monetary valuation (DMV). This is the use of formal deliberation concerning an environmental impact to express value in monetary terms for policy purposes, and more specifically as an input to CBA (Spash, 2001b). A range of papers have recently appeared on this topic (e.g., Gregory and Wellman, 2001; Niemeyer and Spash, 2001; Spash, 2001b; Macmillan et al., 2002, 2006; Wilson and Howarth, 2002; Aldred, 2005; James and Blamey, 2005; Howarth and Wilson, 2006; Lienhoop and MacMillan, 2007) adding to earlier research (Brown et al., 1995; Blamey, 1996; Holland, 1997; Jacobs, 1997; O’Neill and Spash, 1998; Sagoff, 1998; Blamey and James, 1999; Ward, 1999).

In the following sections I will show how environmental economics approaches environmental problems as an extension of market theory and compare this with the approach of the political sciences to social valuation. Using this base understanding of different social processes of valuation I then look at what is being proposed under DMV. Thus, I wish to bring to the fore the connections, or failures to connect, between research within the areas of socio-economics and political science as applied to environmental values and their understanding. A classification is offered which contrast the role of individuals versus groups in the process of valuation and differentiates between individual and social values as products of any such process. The result is to clarify a range of approaches and types of value (from charitable contribution to arbitrated social value) now emerging from DMV, while exposing numerous problems.

2. Social processes of environmental valuation

This section summarises what I see as key aspects of two models: the mainstream economic model of valuation and the democratic political model of human conduct. This allows some characteristics of the route by which choice is made under the different processes to be identified along with the divergence and similarities in economic and political values. In doing so I refer to institutions by which I mean the conventions, norms and formally sanctioned rules of a society. This

follows Vatn (2005: 60) who also notes that: “Institutions regularize life, support values and produce and protect interests.” Thus, we should expect different institutions to support, produce and protect different things. I sketch some of the problems confronting economic and political approaches in order to see, later on, how far DMV is able to address such issues; this also exposes what advocates of each social process are pleading for and trying to defend.

2.1. The economic process of valuation

The standard neoclassical economic approach to valuing the surrounding world is couched within a microeconomic model of institutional structure. In this setting the key unit of analytical concern is the individual. Contrary to many positivistic claims, economics does have an underlying ethical philosophy and that is one where ‘good’ is defined by the consequences of an action as they benefit the individual (Sen, 1987; Anderson, 1993; O’Neill, 1998; Spash, 2002). Social welfare is merely an aggregation of individual welfare. The individual is assumed to make choices via expression of preferences. The happiness, or utility, of an individual is dependent upon their ability to trade to their best advantage. In a standard market setting individuals engage in selling their labour and buying consumer items and their only limit on obtaining happiness is their ability to pay. A process of negotiation or arbitrage in exchange allows some reasoning over appropriate actions and opportunities for learning, although traditionally static economic models ignore this more dynamic aspect.

Institutions defining the rules of engagement have been the subject of research in game theory and experimental economics (Smith, 1991; Kagel and Roth, 1995; Gintis, 2000). Statements as to what an individual is prepared to give up or accept in an exchange situation are regarded as expression of an underlying preference. Once an exchange is finalised the price is set and the value in exchange can be observed. In practice the outcome will depend upon the specifics of market structure, cultural practices and customs. For example, posted prices may be regarded as non-negotiable, or prices may be a starter for haggling, or auctions may be held and such auctions may vary considerably in their design (means of bidding, eligibility, number of iterations, accepted behaviour). This structure is the institutional setting within which exchange operates and in microeconomics is idealised as perfectly

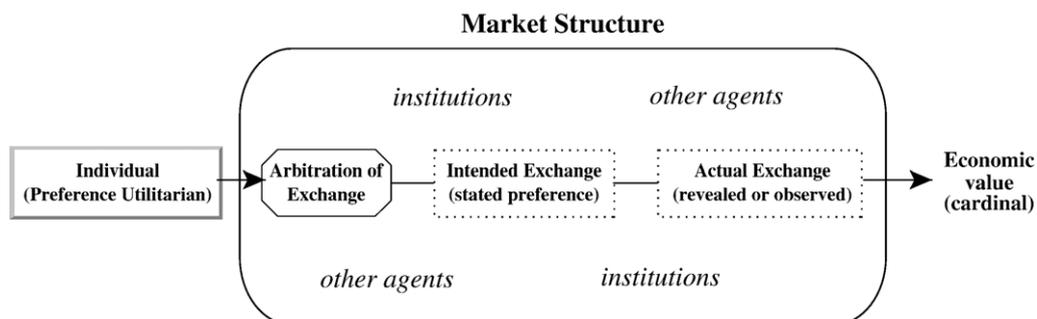


Fig. 1 – The economic process of valuation.

competitive (i.e. many competing buyers and sellers so none has power over prices). The social process of economic valuation as described here is summarised in Fig. 1.

Environmental valuation under CBA borrows directly from the idealised market process (Vatn, 2000). Individuals are expected to be able and willing to express a preference over any environmental change. These preferences are generally regarded as existing *a priori*. A CVM survey or choice experiment aims to obtain a stated preference, while observations of actual markets can be used to infer or reveal preferences, as under hedonic pricing or the travel cost method. Value is given to an object, service or entity on the basis of what will be exchanged in return. Those entities or objects that are regarded as reasonable for entering into the institution of exchange are culturally and historically highly variable. The expansion of environmental valuation, and market institutions for such things as carbon, can be seen as setting new precedents for what humans (or at least some of them) are prepared to treat as items for exchange. Such expansion, beyond the confines of traditional and established commodity markets, has also led to a range of revelations as to problems with the economic approach as a universal theory of social valuation (e.g. O'Neill, 1993; Spash, 2000b; Soma, 2006; Trainor, 2006).

2.2. The political process of valuation

The social process which is political valuation is summarised in Fig. 2. The main unit of concern in political structures can be characterised as social groupings. Thus, for example, concern over social justice emphasises disparities between social classes, casts, ethnic groups, genders and so on. Power is obtained through membership and representation of a social group. Individuals can identify with a given group by conforming to the expectations of other group members so expressing a communitarian view and shared set of values. Such values may be described as social norms, and social psychologists have developed the term subjective norm for the extent to which an individual conforms to what they believe others will think of their actions.

Institutions appear more evident and diverse in the political realm than the economic. Politics is all about the interplay of pluralistic values within a social setting. In an idealised democratic setting that interplay takes place via open deliberation, between individuals and social groups, without coercion. Political debate should aid the formation of

an opinion over any given issue enabling the casting of a vote. Given the socially charged nature of power politics, openly stated intentions to vote can be expected to diverge from privately submitted anonymous ballots. Different designs of political process will also affect the outcome. Indeed national elections in supposedly well established democracies continue to be highly controversial due to the perceived biases within the systems employed. Political institutions tend to advocate first past the post systems at national level and consensus seeking at local or small group level.

Voting is a means of aggregating individual preferences that are (by assumption) defined by ordinal rankings. Basically the most valued outcome is the highest ranked e.g. the option gaining the most votes in a first past the post system. How much more valuable the first outcome is relative to the second is not then judged. This means a tendency towards all or nothing solutions; either your candidate is elected or you lose. One counter to this is to design processes for consensus seeking. However, while consensus has its role to play, the emphasis on consensus politics can also be heavily overplayed and a “consensus” approach may be used to silence minority opinions rather than empower. Consensus can be achieved more easily where issues are generalised, but once specific plans of action and detail arise divisions tend to appear. In this regard, “win-win” solutions are popular rhetorical devices which often lack credibility because the barriers to their achievement are hidden or the potential side effects downplayed. There are often historically embedded institutions, reflected in power structures, preventing “win-win” outcomes. Of course small group consultation, as advocated for addressing environmental issues, need not be restricted to consensus or majority opinions, and the concepts of dissenting and minority reports are important for allowing expression of a broader range of concerns which arise during a political process (Ward, 1999). This may also expose powerful majority interest as distinct from the disenfranchised minority ones. Thus, seeking to explain, explore and respect (not remove) “dissensus” might be just as valuable in some contexts as aiming for consensus can be in others.

In the environmental arena a variety of approaches have been designed and employed to increase participation and deliberation. These are normally described as ranging from consultation as an information gathering exercise through to full engagement with decision making powers where citizens take control (Arnstein, 1969). The former is very common and, for example, UK government documents have been increasingly

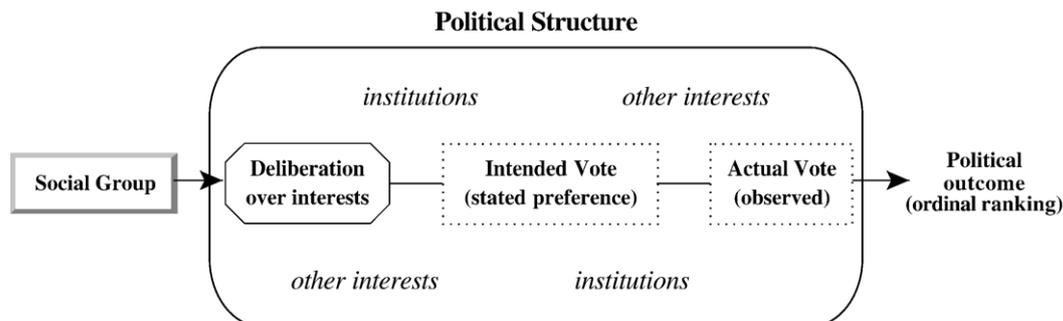


Fig. 2 – The political process of valuation.

posted on the internet for comment. The latter is very uncommon because this requires that authority be effectively handed over by those who have been elected or delegated to take responsibility. Face to face engagement with individuals and groups is of primary concern for addressing perceived failings in existing political processes. Such engagement at regional or national level are rare and this is in part due to issues of representation and responsibility, to which I return below. However there have been attempts to broaden democratic debate and the GM Nation (<http://www.gmnation.org.uk/>) exercise in the UK is an interesting example employing multiple local discussions on a national issue with the aim of reflecting upon national policy.

More commonly deliberative fora are local and tend to select either representatives of specific power groups or members of the public. The former are referred to as stakeholder consultation. The stakeholder is by definition a party with a vested interest in the topic at hand and representatives are chosen on the basis of their standing as representatives of a recognised social group (e.g. farmers, single mothers, local business people). The relevant social groupings for inclusion will vary with the context and problem. Stakeholders can be difficult to engage in a process of deliberation (Arzt, 2005), and especially where they have prior expectations from existing institutions and/or power within existing decision processes which they wish to protect. In reviewing US experience with stakeholder engagement Beierle and Konisky (2001) identify benefits as better incorporation of public knowledge and values, resolving conflict and building trust, and improved understanding of environmental problems, but they also note a lack of impact on plan implementation and occurrences of important interests being ignored.

The more public orientated and inclusive small group approaches look for diversity rather than vested interests. The small group (10–25 people) has become a respected method for investigating environmental conflict, values and interest, whereas twenty years ago it was not even regarded as an established research approach (Burgess et al., 1988a,b). Small group approaches have several variants and names: consensus conferences as developed by the Danish Board of Technology (Joss, 1998), focus groups (Stewart and Shamdasani, 1990), and citizens' juries (Crosby, 1995). Methods which may be employed in combination with stakeholder and small group approaches include scenario analysis, social multi-criteria analysis and mediated modelling (Kallis et al., 2006; Stagl, 2007).

Political scientists have been empowered by the increasing adoption of their suggestions. There has been some realisation in government that public participation in policy is an important aspect of democracy and might be especially effective at the local/regional level. However, participation is far from straight forward itself. One concern is for the process being manipulated through systematic distortion of communication. However, recognising that manipulation is a present and on-going state of affairs in modern society implies a need for processes which remove such distortion allowing people to break free and apply some corrective reflection (Niemeyer, 2005: 348). Such concerns have driven research on, and analysis of, the best approaches by which social values can be integrated in policy processes (Bobrow and Dryzek, 1987; Renn et al., 1995).

Ideal approaches are then described as involving the interplay of technical analysis and social deliberation based upon values, interests and policy options. Such participatory processes do not aim to exclude a role for utilitarian calculations. These can provide an opportunity for explicit consideration of practical reasons for positions. They may be recommended at definition and agenda-setting stages as well being available throughout a given process of deliberation. However, reliance purely upon practical reason justified by utilitarian calculations is recognised as an inadequate means of including individual rights which may therefore be violated. For example the interests of disenfranchised participants may be poorly addressed even when their own evaluations of a process are positive, say because they were so happy with actually being consulted for once. Conceptions of both right and good are then deemed necessary (Pelletier et al., 1999: 122).

2.3. Initial comparison of political and economic processes

A common appeal of the deliberative approach is the belief that it is necessary to allow preference construction and that it can be a transformative experience. The first claim can be seen as paralleling attacks upon the standard economic position. In light of sustained criticism and empirical evidence the assumptions that preferences are pre-existing, stable, and complete across all choice sets, and can therefore merely be called upon, no longer seem tenable. If economists take this seriously then the process by which preferences are formed must be analysed. This is a similar issue for political scientist because of the claims made for deliberative processes as leading to better outcomes. Thus, measures of motivation such as attitudes can be seen as important to understanding the outcomes of both stated preference methods (Spash, 2006) and small group deliberation (Niemeyer, 2005). In the latter case the second claim is relevant because the expectation from political theory is that deliberation will allow individuals to look beyond immediate self-interest and toward the common good (Niemeyer, 2004). This has also been extended to a moralising effect which can enfranchise Nature and allow representation of others (including non-humans). Representation of silent voices such as non-humans and future generations remains a problematic issue in all processes of environmental valuation (O'Neill, 2001).

In general representation of any group relies upon institutional arrangements e.g. election of Union officials, nomination of non-governmental organisation (NGO) spokespersons. In the case of silent voices they are unable to play a role in the institution or to affirm or criticise their designated representative. O'Neill (2001) refers to this as absence of authorisation, accountability and presence. Still there seems a legitimate case for arguing that those engaged in understanding a groups' needs can represent those needs e.g. as in the cases of child welfare or the mentally disabled. Here reliance is upon legitimacy to speak for silent voices due to the knowledge, expertise or judgment of the representative and their reflection of this in caring for the interests and aspirations of the silent ones (O'Neill, 2001). Often NGOs are delegated to represent Nature and/or future generations, although this does not exclude representation via citizens and especially so if the transformative element of deliberation is indeed

operative. Of course who specifically acts as representative of what remains problematic (e.g. which NGO, which person from that NGO, which citizens and why).

In national democratic elections there are fairly simple rules of participation as the aim is to be all inclusive, i.e. the whole of the body politic is meant to be represented in person. In small group participation selection can become far more controversial, especially where the group has decision-making authority as opposed to being merely consulted for an opinion. Within a social group there may be numerous divisions and value positions so that the selection of a representative is far from easy. Small groups which are seen as making decisions for a much larger population can suffer lack of legitimisation. A related criticism is that recommendations from unelected small groups lack clear lines of responsibility for the outcomes. These are issues which economists try to avoid via appealing to statistical representation, e.g. idealised as selecting a random sample from a given population, which concentrates upon empirical and explanatory issues. Such a random selection is actually extremely difficult and expensive to obtain, and so sampling is often quota or even ad hoc. In fact the economic approach tends to ignore normative problems concerning the legitimacy of democratic representation which remain present but implicit.

A different type of exclusiveness relates to the actual process and its implementation. Procedural rules and process are important areas of debate. The general aim of political small group processes is for participatory inclusive deliberation. Yet, any social process of valuation can lead to exclusion. Economic valuation is criticised because WTP leads to exclusion on the basis of income. While the concept of “willingness to say” has been raised as leading to exclusion on the basis of poor education and inability to articulate an argument. However, exclusion is dealt with more explicitly by political processes, and confidence and trust in the structure and conduct of the process are recognised as highly important features. Thus, dominance by one interest is to be avoided and silent parties are to be encouraged to have their say. This can be particularly problematic where there are cultural differences and historically excluded minority groups e.g. Australian aboriginal groups (Rockloff and Lockie, 2006).

Popularity of consultative exercises in order to gain public “buy-in” and increase credibility can also lead to participant “burn-out”, e.g. Gregory and Wellman (200: 41) note their study as being the 75th major consultation exercise in the county within a 10 year period. Where responsible agencies fail to follow through on the recommendations of consultation future attempts to consult will likely prove unpopular and levels of distrust will be increased. Well structured and competently conducted deliberative processes can be costly exercises which participants find challenging. At the same time the outcomes are more uncertain than from the instrumental economic process which has a single number as its goal. Clearly agencies and politicians may dislike the recommendations they get from a group whereas a price which is too high or too low can more easily be adjusted (in private), subject to sensitivity analysis (using expert manipulation), dismissed (via judicious use of alternative expert opinion), or if necessary recalculated (hiring another consultant and informing them of the “failures” of the last study).

Once people have been engaged in a process of deliberation and been empowered as part of a decision process their presence and opinion is less easily dismissed.

3. Advocates of DMV as a theoretical construct

The preceding section has outlined the basic models of economic and political process being applied to environmental problems. How the DMV approach has been advocated as entering into this picture is explored here. A variety of different potential outcomes can then be identified.

Sagoff (1988a,b) established himself in the environmental valuation field with attacks upon environmental economics in general and the CVM in particular. However, he has written suggesting that there is hope for the CVM if it can incorporate (or be incorporated into?) a deliberative process (Sagoff, 1998). In particular he states that the CVM must become “a deliberative, discursive, jury-like research method emphasizing informed discussion leading toward a consensus based on argument about the public interest” (Sagoff, 1998: 213). His recommendation of consensus seeking seems rather counter to his recognition that “individuals may state logically opposing views of social policy” (Sagoff, 1998: 214) and that debate about environmental policy will reflect such views which differentiates it from the realm of economic decisions.

Sagoff has also argued a particularly dogmatic view putting forth a dichotomy of human affairs between the political citizen and the economic consumer: “consumer preferences reflect conceptions of the good life individuals seek for themselves, while citizen preferences reflect conceptions of the good society offered for the consideration and agreement of others.” (Sagoff, 1998: 215). The problem with this reasoning is that markets cannot be so easily separated from politics and are indeed framed by the *a priori* setting of institutions defined by conceptions of the good society. Sagoff (1998) notes there are traditions which identify political rather than market institutions or processes as appropriate to making decisions with respect to environmental goods of moral, aesthetic and cultural significance. However, these traditions are culturally defined and change over time. Thus the boundaries of the market can be observed to have changed (e.g. with respect to child labour, slavery, endangered species). The point is that different values may be simultaneously associated with an environmental entity and imply different motives to action. Certainly these differences may be reflected in different realms of human action (e.g. the economic and political) but there are no clear lines here. Indeed there are whole realms of political action which can be clearly identified as being expressed in the market place. The act of purchase can be a political one with examples from preference for fair trade and organic products to boycotts of products from countries or companies deemed to have behaved badly in one way or another.

Sagoff (1998: 217) notes that people’s moral commitments can conflict with their welfare maximizing behaviour. However, that people hold different motives for valuation does not so clearly lead to a division between citizen and consumer, political and economic. This is important because Sagoff recognises and cites literature on the all pervasive nature of environmental problems. Those environmental problems he has argued are the

domain of “values individuals typically pursue through civic and political association, not through actual or hypothetical market transactions” (Sagoff, 1998: 218). This means all goods and services are in the realm of political action, although Sagoff does not make this point and seems to want to preserve some realm for free markets to operate unfettered, while he leaves the market space and its boundaries undefined. On this point he does state that socialization requires learning “to enjoy what is valuable rather than to value what is enjoyable” (Sagoff, 1998: 219). Which seems to signify that all choices, even in the market place, have a moral aspect.

Initially Sagoff recommends that WTP be restricted to rank or measure preferences relative to one another which is unsurprising as this restricts measurement to that of a political process. As Sagoff (1998: 220) notes, this means the distinction between consumer and citizen preferences loses its significance. However, he fails to address the question: “so why bother with WTP at all?”. Indeed this point has been made by Kahneman et al. (1993: 314) who argue that, if the only objective of measurement is to rank-order issues, WTP is “not the preferred way of doing so because it is psychometrically inferior to other measures of the same attitude”. Others might regard it as politically inferior.

Indeed in order to promote the DMV approach Sagoff does some back tracking and rather confusingly (at various points) recommends three different potential monetary measures as goals. First is a social WTP which is an individual’s opinion of how much society should pay for, or more accurately invest in, a given public good or service. This is basically a decision on how to divide-up a given social budget. Second is a group “value or price” arising from deliberation by a citizen’s jury. Presumably recognising the problems of representation posed by one small group deciding a price he recommends several such juries be run to achieve a consensus (he makes no comment on how this is to be achieved or what happens if they do not). This second approach appears at odds with the argument for restricting outcomes to an ordinal ranking on the grounds that preferences are not to be treated as a measure of subjective well-being. There is no clarity in describing the further use of this price, which might appear akin to price fixing by the likes of a milk marketing board. The relationship of this non-market good price to those derived under current CBA practice is also unclear, but given Sagoff’s critical writings he presumably believes there is a difference. Third is individual WTP as a contribution or fair share rather than a measure of welfare. This has some credibility because the CVM has been noted to produce a payment which has more in common with a charitable contribution than a market exchange value (Spash, 2000a). Unfortunately the interrelationship and role of these three different measures is left very unclear, especially with regard to how they might relate to existing value theory in economics and numbers used in CBA, and indeed there is some hint that they might be incommensurable (Sagoff, 1998: 226).

Brown et al. (1995) recommend a process with striking similarities but differ from Sagoff in that they do not see DMV as a substitute for CVM, because they regard it as distinctly different. They advocate a values jury as a corollary of the US legal jury system, which places individuals in the role of representing society not their own interests. They desire a consensus outcome over an aggregate social value. As in the

political process they see the possibility for such silent voices as those of future generations to be represented. The decision process is seen as one which should involve “use of common sense” (Brown et al., 1995: 258), which is interesting in light of post normal science. In recognising the need for a new methodology to deal with strong uncertainty, Funtowicz and Ravetz (1993) have put forward the concept of post-normal science based upon assumptions of unpredictability, incomplete control and a plurality of legitimate perspectives. They regard an extended peer review approach as particularly relevant where systems uncertainties or ‘decision stakes’ are high and research goals are issue-driven. The normal scientific approach is regarded as having become dominant over all other ways of knowing, e.g., common sense experience, inherited skills of living. Thus, while a jury approach to DMV can call upon scientific witnesses and evidence (Brown et al., 1995), the decision is not to be limited to narrow definitions of rationality which result in exclusion of jurors judgments on the basis that they are acting strategically, protestors or just violating the accepted constraints of the economic approach.

In a theoretical overview Wilson and Howarth (2002) describe “discourse-based valuation” as leading to better outcomes via formal procedures for achieving free and fair deliberation. They attempt to build a theoretical basis by appealing to Rawls and Habermas and define social fairness as “a deliberative forum that: (a) protects participants from uncompensated harms; and (b) ensures that participants have a common set of rights or capabilities.” (Wilson and Howarth, 2002: 435). They see group behaviour as avoiding negotiation and instead “making consensus-based judgments” (Wilson and Howarth, 2002: 432) and “reaching consensus about the social value of an ecosystem good or service” (Wilson and Howarth, 2002: 436). They note that the public goods character of ecosystems services makes public debate appropriate to achieve social equity. In addition they see a clear need for value statements which can be “reported in dollars because these can then be used to complement and compare with results from more traditional valuation methods used in cost-benefit analysis (i.e. contingent valuation).” (Wilson and Howarth, 2002: 436). Indeed they conclude that, while other quantitative and qualitative data may be produced, “it will nevertheless be essential that results be articulated in a metric that is comparable with conventional ecosystem service valuation techniques such as the contingent valuation method.” (Wilson and Howarth, 2002: 440).

The desire for a consensus money metric seems rather at odds with the claim that “ultimate success depends not on unanimity or collective action among all citizens, but on the formalization of procedures and conditions for achieving free and fair deliberation between them.” (Wilson and Howarth, 2002: 435). Indeed the recognition that consensus may not be forthcoming leads to the recommendation that the process may “need to conclude with voting subject to some form of majority rule” (Wilson and Howarth, 2002: 437). The appeal to Rawls is used to describe a process which mirrors fair representation as in the “original position”, i.e. a situation in which a person lacks knowledge of their social identity, power over resources, and personal psychology. This ideal runs into problems because in practice small groups for deliberation are selected on the basis of representing vested interests i.e.

stakeholders. As the authors themselves recognise (Wilson and Howarth, 2002: 438), trying to value complex environmental problems involves grappling with other people's interests and values which challenge one's own knowledge, value judgments and political arguments. An appeal to the original position does not therefore seem tenable.

In another theoretical exploration of DMV, Howarth and Wilson (2006) argue that deliberation can lead to better more informed choices which have greater legitimacy in the democratic process. They see group values as being negotiated by a process involving mutual consent of participants holding equal bargaining power (Wilson and Howarth, 2002: 3). Such a group is recognised as unlikely to focus solely on economic efficiency and instead would be expected to introduce concerns over fair distribution. The core of their argument relates to how people holding equivalent negotiating power will construct a mutually acceptable group value function. To this end they invoke a consensus seeking rule of operation for group decisions and after pursuing some formal game theoretic modelling conclude that consent-based deliberative valuation would result in a different WTP and WTA. More specifically, compared to the group outcome, additive aggregation under CBA will overstate WTP for environmental improvements, and understate WTA for environmental degradation. The clear message is that social WTP as defined by groups should be expected to diverge from aggregated individual WTP.

4. Categories of value arising

The preceding sections reveal several different ways in which values can be expressed in a DMV process. In economics the focus is upon the individual and their preferences which are used to determine an exchange value. Sagoff (1998) has talked of individual's expressing a social value. That is an aggregate amount they believe society should pay rather than their own individual payment. If this were expressed as the result of a standard survey where the respondent performs little or no reflection, and has no group deliberation, the result could be thought of as totally speculative. However, if the outcome is the result of a carefully design small group process then we have individuals expressing their belief in the value society should pay or accept. Individuals are placed in a group setting and then asked to express a value as individuals giving what they believe should be the aggregated value. Note, as explained below, this is distinct from a decision made as a group over such values.

Social value under stated preference techniques is normally calculated by asking individually focussed valuation questions of respondents, who decided as individuals, and then conducting some aggregation procedure (with or without weighting, exclusion of protestors and outliers, and discounting). Yet there is no reason to expect this to equate with an already aggregated response and indeed there are different ways in which the individual value can itself be obtained. Under standard survey methods respondents are asked to answer more or less cold and have, on average, 20 min for the entire process. Under the DMV the whole idea is to extend the deliberation so that sessions may run from a few to several hours and be repeated over several sessions. If following a citizen's jury approach the participants would meet for several

Table 1 – DMV and forms of value expression

Value provider	Terms in which value specified	
	Individual (disaggregated value)	Social (aggregated value)
Individual	Exchange price	Speculative value
Individual in a group setting	Charitable contribution	Expressed social WTP/WTA
Group	Fair price	Arbitrated social WTP/WTA

days. This raises the possibilities of calling witnesses and achieving the transformative and moral awareness raising of the idealised small group political process of deliberation. Bringing in representation of silent voices and issues of fairness then strongly differentiates the process from the narrowly defined stated preference approach.

Yet advocates of DMV, on the basis of theory, go beyond the individual expressing values in a group setting and discuss DMV as a means of obtaining group values. Sagoff's second WTP category is the expression by the group of what they think an individual should pay. This is a form of fair price set on the basis of a group preference. However, the correspondence of this group value with any CBA value is unclear as is how it should be treated or whether it should be aggregated. Wilson and Howarth's (2002) approach is to use the group to directly obtain an aggregated social value. Brown et al. (1995) also favour a group decisions as to what is in society's best interests. In both these instances the form of group decision process will undoubtedly be important to the outcome.

These different positions are summarised in Table 1. The struggle of DMV practitioners who wish a better CBA number can be seen as moving between an exchange price and a charitable contribution. Sagoff's (1998) three suggestions described in the preceding section can be identified as first expressed social WTP/WTA, second a fair price and third a charitable contribution. The argument of Wilson and Howarth (2002), and of Brown, Peterson and Tonn (1995) is clearly for the arbitrated social WTP/WTA.

There is then a clear divergence between stated preference approaches aimed at achieving an exchange value at one extreme and group deliberation to achieve an arbitrated social value. As noted by Brown et al. (1995: 259), while both produce monetary values they differ in important respects. The form of decision is group versus individual. The outcome is a single value versus a distributed value. Representation is of societal interests versus a largely undefined (but assumed self interested individual) focus. Information is open and witnesses may be called versus a tightly focussed closed set of information being presented without question. Issues of fairness may enter group deliberation explicitly along with non-utilitarian ethical concerns and representation of silent voices.

5. From theory into practice

Following on from these theoretical reflections empirical work has been conducted. Studies now exist in all quadrants of

Table 1. Space precludes a full review of the empirical literature (see *Splash*, 2007), but two studies which have appeared in *Ecological Economics* can be briefly presented as examples of the divergence appearing in applications. The first is that of *Macmillan et al. (2002)* which closely follows the economic process model aiming to obtain a more valid exchange value. The second is that of *Gregory and Wellman (2001)* which aims for an expressed social WTP.

Macmillan et al. (2002: 50) conceptualise the valuation process as one where individuals “research their underlying preferences, form and then state a WTP value”. DMV is applied to goose conservation in Scotland. The formal group sessions are fairly minimalist consisting of two one hour meetings separate by one week for reflection. The authors are positively concerned to remove any bids based upon fairness, describing this as strategic behaviour. As they state: “participants may use additional time and information to calculate a ‘fair’ donation rather than their maximum WTP”, and “appropriate checks and protocols to minimise the risk of it occurring are essential” (*Macmillan et al., 2002: 57*). Indeed there is a role here for a moderator “to be proactive and encourage the discussion along appropriate lines, for example by countering any tendencies toward ‘strategising’ but without unduly influencing the WTP of participants for the project” (*Macmillan et al., 2002: 57*). Of course within the context of the neoclassical model and welfare economics the authors are correct, they want an exchange value not an attitude or a charitable contribution or a fair price. However, excluding people who want to express such values then leads towards a process which diverges strongly from the political process model which is meant to be benefiting the approach. Indeed, as noted in *Table 1*, the social setting of a group with time allowed to reflect upon social context would seem to be aimed at encourage charitable giving rather than the self centred exchange value of stated preference theory.

Gregory and Wellman (2001) present a carefully designed and conducted study on management options for Tillamook Bay, Oregon. Critical but controversial ecosystem management actions were identified via detailed “value-elicitation sessions” held with stakeholders prior to small group stakeholder sessions for obtaining social WTP. The authors chose social WTP for three reasons: they regard standard CVM results as producing measures of attitudes not economic value; they cite the public good aspect of their case study as likely to lead to charitable contributions if a standard WTP question were asked; they believe social WTP better reflects opportunity costs i.e. the trade-off with other publicly funded projects. The authors note that a variety of metrics are best with some cases being suited to monetary expression but, because this tends to reduce the quality of information, in other cases “environmental values were best reported directly in terms of trade-offs across options” or in terms of preference ranking. The monetary value elicitation was achieved by a form of choice experiment giving a stated preference by individual participants. However, the authors emphasise the ability of the small group sessions to produce information on distributional consequences, to communicate information on complex problems, and that their approach reflects a decision and trade-off focus rather than a number focus. In addition, failure by individuals to complete certain valuation tasks could be more clearly linked to

controversial aspects of specific options, explained and explored. This more open approach to both the discussions and the outcomes is closer to a political process model.

6. Conclusions

DMV has been advocated as a means by which economic valuation can benefit from aspects of a political process model. Recognising problems with stated preference methods economists have sought processes where there is time for reflection, potential for information gathering and group deliberation. This seems to accept that preferences are formed during a process aiming to value environmental changes and that the type of process is therefore something which needs to be openly discussed as a matter of institutional design.

However, advantages of a political process model are precluded by a closed and controlled approach to valuation. Selecting people randomly to obtain their preferences over an object of trade is very different from selecting people to act as representatives of society who are empowered to make judgments over what is best for society. In between these extremes lie areas in which lesser or greater emphasis is placed upon the individual versus the social context and role. However, as soon as the group setting is established the values expressed will take on an overtly political aspect in that the context is that of the group not the individual. Trying to then remove expressions of group values, such as concerns over fairness, appears as a fundamental misunderstanding of the institutions with which economists are engaging.

If DMV is practiced as a formal citizens’ jury, for example, then sessions would last all day and be repeated over several days, perhaps separated by weeks. Now during these extended sessions the deliberative ideal would suggest that a range of moral and value concerns should arise and some transformation of preferences would take place. The extent to which this is allowed to occur actually varies in practice because some practitioners wish to avoid the occurrence of references to fairness and the possibility of charitable contributions. They wish to constrain the process as much as possible to an economic model while claiming the benefits of political deliberation. Group settings raise issues of social norms and these norms may, under deliberation, be key institutions to be negotiated, discussed and argued about. Interaction then is about such norms, ethics and preferences rather than just the latter. There then seems to be something of a conflict between the use made of the political process model and the desired result for mainstream economists which is stated as achieving improved validity for an exchange value.

Yet what has been revealed here is that there are possibilities for making qualified decisions within a group setting while producing social values which are already aggregated. At present this seems to raise more questions than it answers, but does offer institutions desiring monetary values, as part of a package of guidance, an alternative to the exchange value approach. Indeed the use of DMV can be seen as offering several different values which are distinct from each other. For example, giving a charitable contribution to save whales does not imply that the WTP reflects the value of whales, anymore than giving a contribution to prevent

poverty reflects the value of human life. Nor does this imply people wish to trade-off whales or people for consumer goods or assume that such things are comparable. Similarly an arbitrated social value is very different from an individual's reflection upon what is fair for themselves and others to be charged or compensated. In using DMV economists have landed themselves squarely in the middle of the philosophical debate over realms of value and the political debate over representation of different values in society. DMV shows values can be articulated in distinctly different ways depending upon the institutional context. This identifies the realm of standard economic value, as being incorporated by ecologists and others, without question, as the value of ecosystems and their services, as distinctly narrow both as a theoretical construct and a social process.

REFERENCES

- Aldred, J., 2005. Consumer valuation and citizen deliberation: towards a comparison. In: Getzner, M., Spash, L., Stagl, S. (Eds.), *Alternatives for Environmental Valuation*. Routledge, London, pp. 187–208.
- Aldred, J., 2006. Incommensurability and monetary valuation. *Land Economics* 82 (2), 141–161.
- Anderson, E., 1993. *Value in Ethics and Economics*. Harvard University Press, Cambridge, Massachusetts.
- Arnstein, A., 1969. A ladder of citizenship participation. *Journal of the American Institute of Planners* 26 (4), 216–233.
- Arzt, K., 2005. The challenges of stakeholder participation: agri-environmental policy. In: Getzner, M., Spash, C.L., Stagl, S. (Eds.), *Alternatives for Environmental Valuation*. Routledge, London, pp. 244–262.
- Beierle, T.C., Konisky, D.M., 2001. What are we gaining from stakeholder involvement? Observations from environmental planning in the Great Lakes. *Environment and Planning C, Government and Policy* 19 (4), 515–527.
- Blamey, R.K., 1996. Citizens, consumers and contingent valuation: clarification and the expression of citizen values and issue-opinions. In: Adamowicz, W.L., Boxall, P., Luckert, M.K., Phillips, W.E., White, W.A. (Eds.), *Forestry, Economics and the Environment*. CAB International, Wallingford, pp. 103–133.
- Blamey, R.K., James, R., 1999. Citizens' juries: an alternative or an input to environmental cost-benefit analysis. *Australian and New Zealand Society for Ecological Economics*. Griffith University, Brisbane.
- Bobrow, D.B., Dryzek, J.S., 1987. *Policy Analysis and Design*. University of Pittsburgh Press, Pittsburgh.
- Brown, T.C., Peterson, G.L., Tonn, B.E., 1995. The values jury to aid natural resource decisions. *Land Economics* 71 (2), 250–260.
- Burgess, J., Limb, M., Harrison, C.M., 1988a. Exploring environmental values through the medium of small-groups. 1. Theory and practice. *Environment and Planning A* 20 (3), 309–326.
- Burgess, J., Limb, M., Harrison, C.M., 1988b. Exploring environmental values through the medium of small-groups. 2. Illustrations of a group at work. *Environment and Planning A* 20 (4), 457–476.
- Crosby, N., 1995. Citizens juries: one solution for difficult environmental questions. In: Renn, O., Webler, T., Wiedemann, P. (Eds.), *Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse*, vol. 8. Kluwer, Dordrecht, pp. 157–174.
- Funtowicz, S.O., Ravetz, J.R., 1990. *Uncertainty and Quality in Science for Policy*. Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Funtowicz, S.O., Ravetz, J.R., 1993. Science for the post-normal age. *Futures* 25 (7), 739–755.
- Gintis, H., 2000. *Game Theory Evolving*. Princeton University Press, Princeton, New Jersey.
- Gowdy, J.M., 2004. The revolution in welfare economics and its implications for environmental valuation and policy. *Land Economics* 80 (2), 239–257.
- Gregory, R., Wellman, K., 2001. Bringing stakeholder values into environmental policy choices: a community-based estuary case study. *Ecological Economics* 39 (1), 37–52.
- Hausman, J.A. (Ed.), 1993. *Contingent Valuation: A Critical Assessment*. North-Holland, Amsterdam.
- Holland, A., 1997. The foundations of environmental decision-making. *International Journal of Environment and Pollution* 7 (4), 483–496.
- Howarth, R.B., Wilson, M.A., 2006. A theoretical approach to deliberative valuation: aggregation by mutual consent. *Land Economics* 82 (1), 1–16.
- Jacobs, M., 1997. Environmental valuation, deliberative democracy and public decision-making institutions. In: Foster, J. (Ed.), *Valuing Nature? Economics, Ethics and Environment*. Routledge, London, pp. 211–231.
- James, R.F., Blamey, R.K., 2005. Deliberation and economic valuation: National Park Management. In: Getzner, M., Stagl, S., Spash, C. (Eds.), *Alternatives for Environmental Valuation*. Routledge, London, pp. 225–243.
- Joss, S., 1998. Danish consensus conferences as a model of participatory technology assessment. *Science and Public Policy* 25 (1), 2–22.
- Kagel, J.H., Roth, A.E. (Eds.), 1995. *Handbook of Experimental Economics*. Princeton University Press, Princeton, New Jersey.
- Kahneman, D., Sugden, R., 2005. Experienced utility as a standard of policy evaluation. *Environmental & Resource Economics* 32 (1), 161–181.
- Kahneman, D., Ritov, I., Jacowitz, K.E., Grant, P., 1993. Stated willingness to pay for public goods: a psychological perspective. *Psychological Science* 4 (5), 310–315.
- Kahneman, D., Ritov, I., Schkade, D., 1999. Economic preferences or attitude expressions?: an analysis of dollar responses to public issues. *Journal of Risk and Uncertainty* 19 (1–3), 203–235.
- Kallis, G., Videira, N., Antunes, P., Guimarães Pereira, Â., Spash, C.L., Coccoisis, H., Corral Quintana, S., del Moral, L., Hatzilacou, D., Lobo, G., Mexa, A., Paneque, P., Pedregal, B., Santos, R., 2006. Participatory methods for water resource planning. *Environment and Planning C, Government & Policy* 24 (2), 215–234.
- Knetsch, J.L., 1994. Environmental valuation: some problems of wrong questions and misleading answers. *Environmental Values* 3 (4), 351–368.
- Knetsch, J.L., 2005. Gains, losses, and the US EPA economic analyses guidelines: a hazardous product? *Environmental & Resource Economics* 32 (1), 91–112.
- Lienhoop, N., MacMillan, D.C., 2007. Valuing a complex environmental change: assessing participant performance in deliberative group-based approaches and in-person interviews for contingent valuation. *Environmental Values* 16 (2) (May).
- Macmillan, D.C., Philip, L., Hanley, N., Alvarez-Farizo, B., 2002. Valuing the non-market benefits of wild goose conservation: a comparison of interview and group-based approaches. *Ecological Economics* 43 (1), 49–59.
- Macmillan, D.C., Hanley, N., Lienhoop, N., 2006. Contingent valuation: environmental polling or preference engine? *Ecological Economics* 60 (1), 299–307.
- Martinez-Alier, J., Munda, G., O'Neill, J., 1998. Weak comparability of values as a foundation for ecological economics. *Ecological Economics* 26 (3), 277–286.
- Niemeyer, S., 2004. Deliberation in the wilderness: displacing symbolic politics. *Environmental Politics* 13 (2), 347–372.

- Niemeyer, S., 2005. Preference transformation through deliberation: protecting world heritage. In: Getzner, M., Spash, C.L., Stagl, S. (Eds.), *Alternatives for Environmental Valuation*. Routledge, London, pp. 263–289.
- Niemeyer, S., Spash, C.L., 2001. Environmental valuation analysis, public deliberation and their pragmatic syntheses: a critical appraisal. *Environment and Planning, C, Government & Policy* 19 (4), 567–586.
- O'Connor, M., Funtowicz, S., Aguiler-Klink, F., Spash, C.L., Holland, A., 1998. *Valuation for Sustainable Environments: The VALSE Project Full Final Report*, vol. 395. European Commission, Joint Research Centre, Ispra.
- O'Neill, J., 1993. *Ecology, Policy and Politics: Human Well-being and the Natural World*. Routledge, London.
- O'Neill, J., 1998. *The Market: ethics, knowledge & politics*. Routledge, London.
- O'Neill, J., 2001. Representing people, representing nature, representing the world. *Environment and Planning, C, Government & Policy* 9 (4), 483–500.
- O'Neill, J., Spash, C.L., 1998. Comparing institutional processes for environmental valuation: citizen's juries and contingent valuation. ESRC/Foresight Programme Workshop Strengthening Decision-Making for Sustainable Development. Oxfordshire, Eynsham Hall.
- Pelletier, D., Kraak, V., McCullum, C., Uusitalo, U., Rich, R., 1999. The shaping of collective values through deliberative democracy: an empirical study from New York's North Country. *Policy Sciences* 32 (2), 103–131.
- Renn, O., Webler, T., Wiedemann, P. (Eds.), 1995. *Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse*. Technology, Risk, and Society: An International Series in Risk Analysis. Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Rockloff, S.F., Lockie, S., 2006. Democratization of coastal zone decision making for indigenous Australians: insights from stakeholder analysis. *Coastal Management* 34 (3), 251–266.
- Sagoff, M., 1988a. *The Economy of the Earth: Philosophy, Law, and the Environment*. Cambridge University Press, Cambridge.
- Sagoff, M., 1988b. Some problems with environmental economics. *Environmental Ethics* 10, 55–74 (Spring).
- Sagoff, M., 1998. Aggregation and deliberation in valuing environmental public goods: a look beyond contingent pricing. *Ecological Economics* 24 (2–3), 213–230.
- Sen, A.K., 1987. *On Ethics and Economics*. Basil Blackwell, Oxford, England.
- Smith, V.L., 1991. *Papers in Experimental Economics*. Cambridge University Press, Cambridge, England.
- Soma, K., 2006. Natura economica in environmental valuation. *Environmental Values* 15 (1), 31–50.
- Spash, C.L., 2000a. Ethical motives and charitable contributions in contingent valuation: empirical evidence from social psychology and economics. *Environmental Values* 9 (4), 453–479.
- Spash, C.L., 2000b. Multiple value expression in contingent valuation: economics and ethics. *Environmental Science & Technology* 34 (8), 1433–1438.
- Spash, C.L., 2001a. Broadening democracy in environmental policy processes. *Environment and Planning, C, Government & Policy* 19 (4), 475–482.
- Spash, C.L., 2001b. Deliberative monetary valuation. 5th Nordic Environmental Research Conference. Denmark, University of Aarhus.
- Spash, C.L., 2002. *Greenhouse Economics: value and ethics*. Routledge, London.
- Spash, C.L., 2006. Non-economic motivation for contingent values: rights and attitudinal beliefs in the willingness to pay for environmental improvements. *Land Economics* 82 (4), 602–622.
- Spash, C.L., 2007. *Deliberative Monetary Valuation (DMV) in Practice*. Socio-Economics and Environment in Discussion (SEED). Working Paper Series, No. 4. CSIRO, Canberra, Australia.
- Spash, C.L., Vatn, A., 2006. Transferring environmental value estimates: issues and alternatives. *Ecological Economics* 60, 379–388.
- Spash, C.L., Stagl, S., Getzner, M., 2005. Exploring alternatives for environmental valuation. In: Getzner, M., Spash, C.L., Stagl, S. (Eds.), *Alternatives for Environmental Valuation*. Routledge, London.
- Stagl, S., 2007. Emerging methods for sustainability valuation and appraisal. Sustainable Development Research Network, London, p. 66.
- Stewart, D.W., Shamdasani, P.N., 1990. *Focus Groups: Theory and Practice*. Sage, Thousand Oaks, London.
- Trainor, S.F., 2006. Realms of value: conflicting natural resource values and incommensurability. *Environmental Values* 15 (1), 3–29.
- Vatn, A., 2000. The environment as commodity. *Environmental Values* 9 (4), 493–509.
- Vatn, A., 2004. Environmental valuation and rationality. *Land Economics* 80 (1), 1–18.
- Vatn, A., 2005. *Institutions and the Environment*. Edward Elgar, Cheltenham.
- Ward, H., 1999. Citizens' juries and valuing the environment: a proposal. *Environmental Politics* 8 (2), 75–96.
- Wilson, M.A., Howarth, R.B., 2002. Discourse-based valuation of ecosystem services: establishing fair outcomes through group deliberation. *Ecological Economics* 41 (3), 431–443.