



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Beyond rationality, towards reasonableness: Deliberative monetary valuation and  
Amartya Sen's approach to rationality**

Bartosz Bartkowski\* and Nele Lienhoop

Helmholtz Centre for Environmental Research UFZ, Leipzig, Germany

**Contributed Paper prepared for presentation at the 90th Annual Conference of the  
Agricultural Economics Society, University of Warwick, England**

**4 - 6 April 2016**

*Copyright 2016 by Bartosz Bartkowski and Nele Lienhoop. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*

\* Helmholtz Centre for Environmental Research UFZ, Department of Economics, Permoserstraße 15, D-04318 Leipzig, Germany; [bartosz.bartkowski@ufz.de](mailto:bartosz.bartkowski@ufz.de)

**Abstract**

Economic valuation is often deemed an important source of information for land-use policy.

Stated preference methods (SPM) are a particularly potent class of economic valuation methods, but they are also particularly controversial. In response to accumulating criticism of SPM, deliberative monetary valuation (DMV) has been proposed as an alternative approach.

DMV has gained considerable attention in recent years—however, being a combination of elements from neoclassical economic theory and from the theory of deliberative democracy, it lacks a consistent theoretical foundation, especially regarding rationality assumptions. In our paper, we aim at closing this gap and propose to found DMV on Amartya Sen's approach to rationality. We show that his approach fits well the motivation for engaging with DMV and discuss its implications for the practice of DMV.

**Keywords** deliberative monetary valuation, communicative rationality, economic rationality

**JEL code** Q51, Q57

## 1 Introduction

Despite growing interest in monetary estimates for all sorts of land-use changes, the most popular valuation methods<sup>1</sup>—stated preferences—yet exhibit considerable deficiencies. The critique evolves from two avenues of concern, which might be called inside and outside critique, respectively (Lo and Spash, 2013): methodological issues relating to the validity of valuation outcomes (i.e., respondents' willingness-to-pay), and political-ethical issues pointing at the unsatisfactory ethical foundations of the rationality assumptions underlying economic valuation. The methodological concerns primarily relate to the economic assumptions that respondents of stated preference surveys have predefined preferences for any environmental change and are able to translate these into monetary amounts in a one-shot survey (Kahneman et al., 1999; Lienhoop et al., 2015; Spash, 2007). It is argued that they usually do not have predefined preferences: As a result, instead of constructing their preferences, respondents are likely to be influenced by decision heuristics and framing effects that are far from showing how much they really value an environmental change at stake (Tversky and Kahneman, 1974). Political-ethical concerns are twofold. The first one relates to the so-called consumer-citizen dichotomy (see Ami et al., 2014; Soma and Vatn, 2014): Preferences elicited in stated preference studies are normally based on personal needs and interests, that is, respondents are supposed to maximise their individual welfare (known as *consumer* preferences). Critics claim that this assumption discourages respondents from taking account of society's needs and those of future generations (and thus to act as *citizens*), and regard consumer preferences to be contradictory to the public nature of many environmental goods (Niemeyer and Spash, 2001; Vatn, 2009). While consumer preferences are expressed in social isolation, public goods are used and shared by many, are indivisible among individuals, and may also affect future generations. Hence, according to critics, it is indispensable for public policy-making that people go beyond their personal needs and consider what might be good for society, the environment, and future generations (Dietz et al., 2009; Niemeyer, 2004; Sagoff, 1988). The second political-ethical concern relates to the fact that the focus on monetary estimates reduces important arguments for or against policies down to one number. However, in order to reach good decisions about projects or policies it would be important to understand the reasons why certain stakeholder groups advocate or oppose a certain environmental change (Sen, 1995). Stated preference applications only supply, if at all, very restricted information about respondents' motives, although such

---

<sup>1</sup> See, e.g., de Groot et al. (2012), especially Table 1.

additional information would give policy-makers important insights into the reasons why a particular outcome is preferred (cf. Söderholm, 2001).

The political-ethical concerns regarding stated preference methods are frequently voiced by advocates of deliberative institutions, which form a completely different approach to valuing land-use changes and have a different theoretical underpinning. In deliberative institutions participants are involved as citizens with the task to reach a mutual understanding and common solution about an environmental change in the form of consensus or compromise through group interaction and exchange of arguments (Vatn, 2009). The opportunity to discuss and sufficient time to think in deliberative institutions are supposed to enable participants to discover and affirm their preferences on the environmental issue at stake (cf. Braga and Starmer, 2005).

In the past years, deliberative institutions have gained increasing interest from valuation practitioners, because of their potential to address the limitations of stated preference methods described above (Spash, 2007). From this, two approaches forming a hybrid of stated preference methods and deliberative institutions have evolved: First, Deliberative Valuation<sup>2</sup> is closer to deliberative institutions and seeks to reach mutual consent in the form of common WTP (Brown et al., 1995; Kenyon and Nevin, 2001; Lo, 2013; Wilson and Howarth, 2002). Second, deliberative monetary valuation (DMV) with Market Stall and Valuation Workshops lean more towards conventional stated preference methods (elicitation of individual preferences and aggregation of individual WTP), but incorporate important elements of deliberative institutions, especially preference learning through discussion and time to think. Thus, while still relying on questionnaire-based stated preference surveys, DMV includes deliberation as an important component in the process of preference formation and elicitation (Bunse et al., 2015; Lienhoop and Völker, in press; MacMillan et al., 2002).

In this paper we focus on DMV. The reasons for that are threefold. First, as observed by Bunse et al. (2015), only a few studies have aimed at eliciting social WTP, most applications leaning towards DMV. Thus, DMV appears empirically more relevant. Second, social-WTP based studies are so far removed conceptually from neoclassical economic theory that they generally lack a consistent theoretical basis which would allow for proper interpretation of their results. We are not aiming in this paper at filling this large gap. Last but not least, we

---

<sup>2</sup> Other terms for deliberative methods eliciting collective WTP are discourse-based valuation or value jury. Lo (2013) speaks of DMV, even though the core of their application was to reach a consensual decision.

will present arguments in section 4 that suggest DMV being superior to social-WTP based approaches.

While existing research has made important contributions to understanding the role of DMV in terms of valuation outcomes, the theoretical underpinnings of this novel approach remain under-investigated (cf. Bunse et al., 2015). The combination of ‘the best of both worlds’ (Spash, 2007, p. 691) entails that two contrasting theories—based on economic versus communicative rationality assumptions—are entangled in one method, which has attracted criticism from both economists and advocates of communicative rationality (Lo, 2013; Lo and Spash, 2013; Spash, 2007). This lack of theoretical underpinning calls for a clear and consistent theory underlying DMV. In this paper we take a perspective that has not gained any attention yet, by investigating the implications of Amartya Sen’s theory of rationality (e.g., Sen, 2010) for DMV. This perspective is particularly interesting because Sen has himself criticised economic valuation *via* stated preference methods (Sen, 1995). We are confident, however, that Sen’s own ideas regarding rationality can be used to combine ‘the best of both worlds’ and to provide DMV with a more firm theoretical footing than it has now.

The remainder of the paper is organised as follows: Section 2 provides an overview about the current state of research with regard to the rationality assumptions behind DMV. Section 3 presents Amartya Sen’s approach to rationality, and Section 4 offers an interpretation of these rationality assumptions in the DMV context. The paper ends with a conclusion (Section 5).

## **2 Identifying the rationality gap**

Being a hybrid between stated preference methods and deliberative institutions, DMV is based on two contrasting theories. In this section we will elaborate on the differences within its theoretical underpinnings and identify the need for rationality assumptions tailored to suit DMV.

Stated preference methods are rooted in neoclassical economic theory and are based on the following assumptions of rationality. A respondent participating in a stated preference survey is assumed to act as *homo oeconomicus* with the following typical characteristics: 1) she holds full information about the environmental good or service at stake; 2) she is self-interested (society’s and future generations’ interests are hardly regarded); and 3) she holds predefined preferences (Spash, 2007). Conversely, deliberative institutions are based on deliberative democratic theory involving communicative rationality assumptions. Thus, a respondent participating in a deliberative institution is assumed to 1) be a reflexive citizen; 2) consider

society's and future generations' interests; and 3) socially construct her preferences (Vatn, 2005). Vatn (2009) describes the difference between economic and communicative rationality assumptions as I-rationality (self-interested consumer) and We-rationality (other-regarding citizen). These two viewpoints differ in terms of the preference formation process: While preference elicitation is static in stated preference methods (preferences are pre-existing, complete and stable), it is a dynamic process in deliberative institutions, where respondents learn about their preferences that are culturally embedded in their social context (Lo, 2013; Vatn, 2009).

Oftentimes, Jürgen Habermas's discursive ethics is called as the main source of inspiration for deliberative institutions. Habermas (1981) describes an 'ideal speech situation,' that is a situation of free and equal discussion without time constraint, and refers to a 'transcendental quality' of deliberation, in which participants consider their individual interests, and through deliberation transcend these interests to adopt other-regarding perspectives and seek a common solution. For participants to discover and affirm their preferences on the issue at stake the following deliberative aspects need to be considered: 1) citizens must be educated and informed about the issue; 2) they must have the opportunity to extensively reflect on their preferences; 3) they should be encouraged to ask questions; and 4) they should be spurred to express arguments for one outcome over another (Fishkin, 1993; Habermas, 1981). Eventually, communicative rationality aims to reach a 'workable agreement,' which involves that participants agree on a course of action without requiring a convergence of preferences supporting the course of action (Dryzek, 2000).

Differences between economic and communicative rationality have implications for how social welfare is interpreted. In conventional economic theory, social welfare is defined in terms of (mostly additive) aggregation of individual preferences over the relevant population. This leads to a call for statistical representativeness in survey-based economic valuation studies. Advocates of deliberative institutions argue that *political* representativeness should be assured by recruiting participants that represent a diversity of social characteristics and a plurality of viewpoints towards the environmental change under investigation (Goodin and Dryzek, 2006). They do not consider statistical representativeness as necessary because, contrary to neoclassical economics, they do not assume that individuals are unable or unwilling to include considerations of other people's (and non-human organisms) interests in their calculus (see also Gregory et al., 2012).

In applications of DMV, Habermas's communicative rationality is an archetype and the requirements on deliberation are adapted to suit economic rationality, i.e., rather than being a means of reaching mutual consent, deliberation can be seen as a means to help participants refine their individual preferences. The opportunity to discuss with other people facilitates important social processes of value formation and makes respondents 'more confident regarding what should be valued and why' (Svedsäter, 2003, p. 125).

Being a hybrid of the two contrasting approaches, DMV receives considerable criticism both from proponents of economic rationality and from proponents of communicative rationality. On the one hand, critics with background in neoclassical economics claim that the procedural approach for preference learning<sup>3</sup> in DMV is not necessary thanks to pre-defined preference sets in respondents' minds. Furthermore, exposure to other participants' arguments and viewpoints might influence preferences and also lead to the consideration of social needs. The latter would not be compatible with cost-benefit analysis due to the risk of double counting in the aggregation process. On the other hand, advocates of deliberative institutions criticise that the isolated elicitation of preferences *via* anonymous questionnaires yet leads to too self-centred preference statements, thus not taking society's needs into account (Howarth and Wilson, 2006).

To our knowledge, only one research study has explicitly attempted to address the lack of a clear and consistent theoretical underpinning for DMV. With the thesis that DMV should account for value plurality, Lo (2013) proposes to base DMV on Habermas's 'communicative rationality' and the search for a 'workable agreement'. However, Habermas's discursive ethics is a highly idealised theory and its applicability to real-world problems involves a large amount of interpretation. Particularly, even though Habermas's theory itself depends heavily on the notion of unanimity/consensus (see also Cohen, 1997), Lo (2013) states that '[c]onsensual decision on WTP is desired, but unanimous consensus is not deemed to be an imperative' (p. 87, footnote suppressed). Unfortunately, it is not clear what the aggregation mechanism for individual preferences is supposed to be when unanimity is not achieved.<sup>4</sup>

---

<sup>3</sup> In the literature one also finds the terms 'preference formation' (e.g., Sagoff, 1998; Vatn, 2004) and 'preference discovery' (Braga and Starmer, 2005). We take them as synonymous for the purposes of this paper.

<sup>4</sup> The paper by Lo (2013) includes a case study, in which a citizens' deliberation workshop on carbon pricing was conducted in Canberra, Australia. Yet, as the focus of the study was rather qualitative and explorative, no suggestions are offered regarding matters of aggregation of individual preferences.

In the next section, we will present an approach to rationality that we think is very promising as a theoretical basis for DMV: the rationality-reasonableness approach by Amartya Sen. In section 4 we then discuss the implications of this approach for DMV.

### 3 Amartya Sen's approach to rationality

Amartya Sen's approach to rationality has its roots in a firm critique of rational choice theory<sup>5</sup> (RCT). Different parts of this critique have been presented by Sen in different publications over the last more than 40 years, and many have been bundled in his recent *magnum opus*, 'The Idea of Justice' (Sen, 2010). The approach advanced by Sen has two major components, which might be called 'positive' and 'normative,' respectively, despite his own insistence that these two kinds of analysis cannot be clearly delineated (Sen, 2008; see also Putnam, 2004). The positive part centres around two major concepts: meta-rankings of preferences<sup>6</sup> and sympathy and commitment. The normative part consists mainly of a definition of rationality as 'primarily a matter of basing our choices – explicitly or by implication – on reasoning that we can reflectively *sustain* if we subject them to critical scrutiny' (Sen, 2010, p. 180, emphasis in original). We will present these two parts of his approach successively.

Drawing upon the work by Adam Smith (1759), Sen distinguishes between sympathy and commitment in his critique of 'rational fools,' i.e., the RCT's narrow picture of rationality as pursuit of self-interest (Sen, 1977). He argues that human actions are motivated not only by the pursuit of self-interest, even if the latter is defined as including everything that positively influences our utility. Accordingly, he defines sympathy as 'the case in which the concern for others directly affects one's own welfare' and argues that this notion is compatible with some more broad interpretations of RCT (cf. Becker, 1996; Jolls et al., 1998), whereas commitment, i.e., acting upon a sense of duty or obligation, contrary to own welfare, is not (Sen, 1977, p. 326).<sup>7</sup> In his view, human action cannot be meaningfully explained (in positive analysis) by abstracting from motivations (see also Sen, 1976)—yet this is, in effect, the preference utilitarian approach behind neoclassical economics.

---

<sup>5</sup> RCT is often used to describe the neoclassical concept of rationality. Actually, there are two strands within RCT: the *substantive* RCT *sensu stricto*, in the tradition of the Chicago school and game theory, which emphasises utility maximisation by fully informed, self-interested individuals; and the more *formal* theory of rationality as promoted within the revealed preference theory (Samuelson, 1938), which describes rationality in terms of internal consistency of choices. Sen's critique is directed towards both. For a discussion of the distinction between formal and substantive theories of rationality, see, e.g., Reiss (2013, chap. 3).

<sup>6</sup> Also called 'second-order volitions' (Frankfurt, 1971), 'metapreferences' (Hirschman, 1982) and 'preferences over preferences' (Elster, 1982) by other authors.

<sup>7</sup> This exhibits obvious similarity with the concept of social norms as discussed in Elster (1989).



Whether commitment really is different from sympathy is, however, debatable. It has been argued in game-theoretic analyses of the evolution of altruism (Axelrod and Hamilton, 1981) and in related publications that aim at introducing insights from evolutionary biology into ethics (e.g., de Waal, 2009) that altruistic behaviour, including many social norms, is in the (long-term) interest of individual human beings. Not to act upon a sense of duty or obligation can have negative repercussions such as ostracism and social exclusion, which can be interpreted as negatively influencing utility. Their anticipating avoidance can well be viewed as compatible with maximisation of a broadly defined utility function, thus making disappear Sen's distinction between sympathy and commitment. Thus, we think that while his insistence on the relevance of motivations (and not only of choices) is correct, we have doubts regarding the supposed difference between sympathy and commitment.

In addition to sympathy and commitment, Sen introduces in his critique of revealed preference theory the concept of meta-rankings of preferences<sup>8</sup> (Sen, 1977, 1974). In a positive sense, this means that on top of a preference ranking constrained by one's situation (including environmental and social pressures, psychological features of the person considered etc.), one has a meta-ranking of such rankings, which 'can provide the format for expressing what preferences one would have preferred to have' (Sen, 1977, p. 339), i.e., under different, *counterfactual* circumstances. In other words, the usual *first-order* preferences might be conceived as preference orderings under given constraints, while second-order preferences/meta-rankings are concerned with alternative hypothetical worlds, between which *constraints sets* vary. Sen's primary motivation in developing the concept of meta-rankings seems, however, to have been normative, as expressed by how he introduced it: '[a] particular morality can be viewed, not just in terms of the "most moral" ranking of the set of alternative actions, but as a moral ranking of the rankings of actions' (p. 337). In the following discussion, we will be primarily concerned with the positive interpretation, as it provides a possibility to express one's 'deeper' preferences, transcending the constraints of the situation in which one currently is.

Let us now turn to the normative part of Amartya Sen's approach to rationality. He identifies rationality not with maximisation of a utility function or with consistency of choices, as

---

<sup>8</sup> In fact, sympathy/commitment and meta-rankings are rather closely related concepts, as meta-rankings can be viewed as expression of commitment. Both can be seen as sort of 'long-term preferences', as by acting upon commitment one may hope to bring about a better society sometime in the future. Under this interpretation, too, it appears that placing commitment outside of even a broad interpretation of utility is too radical a step (see main text).

conventional economics does, but with the ability to provide reasons for one's actions. Also, he distinguishes between *rationality* (reasoning with oneself) and *reasonableness*<sup>9</sup> (reasoning with others) (Sen, 2010, p. 197). Reasonableness is, obviously, the stronger concept in Sen's framework. Here, again, he draws upon a less well-known (than the *invisible hand*) concept proposed by Adam Smith—the *impartial spectator*, a device that is meant to support reasoning. The idea behind the impartial spectator is that in justifying our actions, both individual and collective, we should 'not leav[e] out the perspectives and reasonings presented by anyone whose assessments are relevant, either because their interests are involved, or because their ways of thinking about these issues throw light on particular judgements – a light that might be missed in the absence of giving those perspectives an opportunity to be aired' (Sen, 2010, p. 44). The impartial spectator is more of a thought experiment, not necessarily an actual person. The goal of applying this device is to go beyond the opinions and perception of facts as co-determined by one's social environment and to transcend them. From this perspective, a reasonable action is one that can be sustained in the light of the need to provide *impartial* reasoning. Interestingly enough, Sen argues, contrary to many other political theorists who dealt with similar issues,<sup>10</sup> that reasoning cannot and should not be expected to lead to unanimity and consensus. Rather, there will be an irreducible plurality of sustainable reasons.<sup>11</sup> There is, thus, not one rational or reasonable course of action in each situation—even though there may be clearly identifiable irrational ones.

In the next section, we draw implications of Sen's approach for DMV and discuss them.

#### **4 Reasonableness and DMV**

Each of the three elements of Amartya Sen's approach to rationality, as described above, can be taken into account within a DMV framework. In the most general sense, rationality as reasoning and the need for reasonableness in collective choice can be directly translated into a call for deliberation. Deliberation forces participants in economic valuation studies to think about their own reasons (rationality) and to consider reasons of others (reasonableness). However, since rationality in Sen's sense is inherently not controllable from the outside, deliberation can be viewed as fostering reasonableness. Thus, a deliberative framing helps to

---

<sup>9</sup> Actually, the concept of reasonableness as used by Sen seems to go back to Scanlon (1982).

<sup>10</sup> Prominent examples are John Rawls (1971) and Jürgen Habermas (1981).

<sup>11</sup> This can be interpreted as reflecting differences between people in their metaphysical backgrounds, each of which cannot be sensibly argued against beyond assessing their logical consistency.

surpass the much-criticised ‘consumer perspective’ (Sagoff, 1988; Sen, 1995) and to better take into account the motivations beyond the choices people make, as it has been argued that ‘choices cannot be relied upon to reveal preferences, particularly in the absence of information on agents’ beliefs and how they conceive of the decision’ (Aldred, 2006, p. 150). This would reflect Sen’s contention that ‘the eventual guarantee for individual freedom cannot be found in mechanisms of collective choice, but in developing values and preferences that respect each other’s privacy and personal choices’ (Sen, 1970, p. 85), from which he draws the conclusion that preferences shall not be interpreted as given. Rather, they are the result of deliberative social processes and interactions. This view has significant similarity with the interpretation of deliberation in economic valuation exercises as a way to support the discovery of (informed) preferences by the participants (MacMillan et al., 2006). However, beyond these rather general insights, three more specific implications of Sen’s thinking for DMV can be identified.

First, Sen’s inherently pluralist approach calls into question the idea of some scholars, both philosophers and economists, that consensus/unanimity should be the goal of deliberation (Cohen, 1997; Wilson and Howarth, 2002). This goes beyond the sole diagnosis that consensus might not be feasible in many cases (Buchanan and Tullock, 1962, chap. 7) and is in line with the argument of Elster (1982, p. 237) that ‘unanimity, even if sincere, could easily be spurious in the sense of deriving from conformity rather than from rational conviction’<sup>12</sup> and that some ‘social choice mechanism’<sup>13</sup> is necessary to reach decisions (Elster, 1983, chap. I.5). Also, Sen argues that both self-interested and commitment-driven reasons can survive impartial scrutiny, which is an argument in favour of taking both individual and social preferences into account (also Elster, 1983, p. 38; Lo and Spash, 2013), contrary to calls from some proponents of deliberative valuation (e.g., Brown et al., 1995; Wilson and Howarth, 2002). Importantly, Sen’s point is that even if all participants in a debate are reasonable, they may still not be able to reach consensus. Thus, forcing them to agree on, e.g., a social WTP may be contradictory and suppress the ‘plurality of impartial reasons.’

An important question is, however, whether an aggregated WTP figure derived from a stated preference method (choice experiment or contingent valuation), even if combined with deliberation to facilitate reasonableness of preferences, is a proper preference aggregation

---

<sup>12</sup> ‘A consensus on public decisions may flourish so long as the exact grounds for that accord are not very precisely articulated’ (Sen, 2000, p. 935).

<sup>13</sup> A social choice mechanism is an instrument that allows the aggregation of individual preferences so as to arrive at ‘social preferences.’ For a technical definition see, e.g., Sen (1969) and Pattanaik (2002).

mechanism.<sup>14</sup> While it has been argued that, in principle, various non-consumption social policy objectives can be accounted for by correcting measures of aggregate consumption, i.e., aggregated sum of individual WTPs (Dasgupta et al., 1972, p. 40), which is what DMV is supposed to do, there remain objectives which cannot be easily factored in (see also Randall, 2002; Hammitt, 2013). Thus, it might be argued that economic valuation, especially of complex environmental goods, i.e., those arguably necessitating the use of DMV, is an imprecise ‘expressive device’ (Meinard and Grill, 2011) rather than a precise basis for comprehensive social choice. In fact, this might well be the proper interpretation of the preference utilitarian foundations of stated preference methods—they are more of a ‘status quo poll’ that marks the beginning of a public debate than the end of such discussion.<sup>15</sup> DMV potentially moves preferences closer to the ideal state of ‘true utilitarian,’ i.e., well-informed and well-considered preferences, as called for by many proponents of preference utilitarianism as basis of social justice considerations (Harsanyi, 1977; Mirrlees, 1982)—it certainly makes them more *reasonable* in Sen’s sense. At the same time, it avoids ‘open[ing] a pandora’s box’ (Hahn, 1982, p. 188fn.), i.e., requiring a definition of these supposedly ‘rational’ or ‘true utilitarian preferences’ or determining whether participants actually have arrived at them. Thus, WTP elicitation in combination with previous deliberation, i.e., DMV, seems to close a number of gaps: it makes preferences more *reasonable* in Sen’s sense, which at the same time should please preference utilitarians; while not being a social choice mechanism proper, it arguably provides a better *expressive device* than conventional stated preference methods; and it takes into account both individual and social preferences.

A question that cannot be easily answered by referring to Sen’s work is whether WTP elicitation is the right way to aggregate individual preferences, although his discussion of the ‘discipline of cost-benefit analysis’ (Sen, 2000), including a pointer to the important problem of ‘warm glow’ (Andreoni, 1990), and his earlier paper on contingent valuation (Sen, 1995) suggest that he is highly sceptical of at least the conventional valuation approach. Nonetheless, some aggregation mechanism for individual preferences is needed. Even if we agree that consensus is neither feasible nor desirable, it is still not clear what the proper

---

<sup>14</sup> We follow here Dasgupta (2001, p. 1), who emphasises that valuation and evaluation are different things: ‘we *value* when comparing objects and we *evaluate* when comparing the relative merits of actions.’ While the former is often the first step towards the latter, they are distinct levels of a social decision-making process. DMV is ‘responsible’ for the lower level only. Accordingly, we are talking here about preference aggregation, not about making actual (collective) decisions. For this, DMV results might, e.g., feed into a cost-benefit analysis or just inform a political decision-making process.

<sup>15</sup> One may want to paraphrase Sen’s remark on impossibility results from social choice theory (Sen, 2010, p. 311) by stating that economic valuation ‘is meant to be the *beginning* of a discussion about how the [environmental] problem is to be tackled – not the *end* of any possible argument.’ (emphasis in original)

alternative is. It appears, however, that WTP elicitation, especially by means of choice experiments, has the advantage against, say, majority voting<sup>16</sup> in that a) it is not as ‘binary’ (yes/no) as the latter and b) it is more flexible because it does not provide information on the social preferences towards one single environmental change, but a whole array thereof.

Second, there is the more practical implication of Sen’s rationality approach, namely, that it might be sensible to include in deliberative formats *impartial spectators*, i.e., participants who do not have any vested interests in the issue at stake. Conventional deliberative valuation approaches mostly rely on inviting groups limited to people who have a more or less direct relationship to the ecosystem change valued. This, however, carries with it the danger of what Sen calls ‘local parochialism’ (Sen, 2010, pp. 128–130), i.e., either ignoring repercussions of local collective actions for the outside world or overlooking important reasons because of limited collective experience, local norms etc. The participation of outsiders of ‘enlightenment relevance’ (p. 132) may help to bring about not only more rational/reasonable choices, but also choices that are less prone to hypothetical bias, because participants in deliberative valuation workshops can be expected to reason about their motivations more thoroughly. In practice, it might be difficult to find completely stake-less participants for valuation studies. Thus, the role of the impartial spectator might be taken by well-informed outsiders, e.g., a scientist not directly linked to the specific project.

Third, it might be important to facilitate the consideration of *meta-rankings* by participants in deliberative valuation exercises. In fact, based on our experiences from conducting DMV studies, one can tentatively propose that participants do not always make a clear distinction between their (first-order) preferences given current constraints (institutional, budgetary, psychological...) and their second-order preferences over different hypothetical ‘worlds’ with differing sets of constraints. But when these two levels of preference are intermingled (within or across individuals), the elicited preferences are inconsistent, either already at the individual level or when aggregated:

*If, in addition to information about the first-order preferences of individuals, we have information about their higher-order preferences, we may be able to get out of some of the paradoxes of rational choice theory. (Elster, 1982, p. 237)*

---

<sup>16</sup> In fact, it was Sen who pointed out that Arrow’s impossibility theorem (Arrow, 1951) results from using a very restrictive informational base, which in effect only allows for voting schemes as social choice mechanisms. He argued instead for broadening the informational base beyond simple voting schemes (e.g., Sen, 1987).

Also, it was pointed out by Sen himself in the context of contingent valuation that ‘[w]hat I am willing to contribute [to an environmental public good] must, given the nature of the task, depend on how much I expect others to contribute’ (Sen, 2000, p. 949), which is another issue involving meta-rankings, when the behaviour of others is included in the set of constraints one is facing. Furthermore, looking only at first-order preferences makes it impossible to differentiate between adaptive preferences (‘sour grapes’ in Elster (1983, 1982), ‘mental conditioning’<sup>17</sup> in Sen (2001) or ‘resigned adaptation’ in Olson and Schober (1993)), which are shaped by current constraints so as to minimise individual frustration, and ‘rational’ preferences. DMV is relatively well-suited to deal with these problems, if designed properly. On the one hand, it should be made clear to participants that they should not intermingle first-order and second-order preferences. An option would be to elicit both: in a first elicitation round, participants could be asked explicitly to make choices/state their WTP given the constraints they are currently facing (especially institutional constraints might be relevant). In a second round, the WTP elicitation could be extended by including factors which influence second-order preferences (to be derived from pre-testing and focus groups). However, this might well lead to overtaxing participants. Another, less demanding way of taking information on second-order preferences into account, would be the application of ‘think aloud’ like approaches in the preference elicitation phase (e.g., Schkade and Payne, 1994). Furthermore, the discussions might provide further qualitative insights into the constraints which shape participants’ second-order preferences.

## **5 Conclusions**

In this paper, we have aimed at closing the gap in the literature on deliberative monetary valuation (DMV), which results from a lack of a consistent theoretical foundation on which DMV could rest. We focused specifically on the rationality assumptions, as DMV combines arguments from economics and political theory, which exhibit differing views on rationality. We showed that Amartya Sen’s approach to rationality can both fill the gap and provide powerful arguments in favour of DMV. Most importantly, Sen’s approach underscores the importance of deliberation in general, while at the same time questioning consensus-oriented approaches by emphasising the irreducible plurality of impartial reasons and the limited usefulness of voting schemes, from which the conclusion can be drawn that WTP elicitation

---

<sup>17</sup> ‘Our mental reactions to what we actually get and what we can sensibly expect to get may frequently involve compromises with harsh reality. [...] The deprivations are suppressed and muffled in the scale of utilities (reflected by desire-fulfilment and happiness) by the necessity of endurance in uneventful survival’ (Sen, 1985, p. 15).

might be viewed as a good alternative mechanism for the aggregation of individual preferences. Furthermore, two additional implications of Sen's approach for DMV have been drawn: the need for 'impartial spectators' participating in deliberative workshops; and the necessity to distinguish between first-order and second-order preferences.

## References

- Aldred, J., 2006. Incommensurability and monetary valuation. *Land Economics* 82, 141–161. doi:10.3368/le.82.2.141
- Álvarez-Farizo, B., Hanley, N., 2006. Improving the process of valuing non-market benefits: Combining citizens' juries with choice modelling. *Land Economics* 82, 465–478. doi:10.3368/le.82.3.465
- Ami, D., Aprahamian, F., Chanel, O., Joulé, R.-V., Luchini, S., 2014. Willingness to pay of committed citizens: A field experiment. *Ecological Economics* 105, 31–39. doi:10.1016/j.ecolecon.2014.04.014
- Andreoni, J., 1990. Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal* 100, 464–477. doi:10.2307/2234133
- Arrow, K.J., 1951. *Social choice and individual values*, Monograph / Cowles Foundation for Research in Economics at Yale University. Wiley, New York.
- Axelrod, R., Hamilton, W.D., 1981. The evolution of cooperation. *Science* 211, 1390–1396. doi:10.1126/science.7466396
- Becker, G.S., 1996. *Accounting for tastes*. Harvard University Press, Cambridge, Mass.
- Braga, J., Starmer, C., 2005. Preference anomalies, preference elicitation and the discovered preference hypothesis. *Environmental and Resource Economics* 32, 55–89. doi:10.1007/s10640-005-6028-0
- Brown, T.C., Peterson, G.L., Tonn, B.E., 1995. The Values Jury to aid natural resource decisions. *Land Economics* 71, 250–260. doi:10.2307/3146505
- Buchanan, J.M., Tullock, G., 1962. *The calculus of consent: Logical foundations of constitutional democracy*. University of Michigan Press, Ann Arbor.
- Bunse, L., Rendon, O., Luque, S., 2015. What can deliberative approaches bring to the monetary valuation of ecosystem services? A literature review. *Ecosystem Services* 14, 88–97. doi:10.1016/j.ecoser.2015.05.004
- Christie, M., Hanley, N., Warren, J., Murphy, K., Wright, R., Hyde, T., 2006. Valuing the diversity of biodiversity. *Ecological Economics* 58, 304–317. doi:10.1016/j.ecolecon.2005.07.034
- Christie, M., Rayment, M., 2012. An economic assessment of the ecosystem service benefits derived from the SSSI biodiversity conservation policy in England and Wales. *Ecosystem Services* 1, 70–84. doi:10.1016/j.ecoser.2012.07.004
- Cohen, J., 1997. Deliberation and democratic legitimacy, in: Bohman, J., Rehg, W. (Eds.), *Deliberative Democracy: Essays on Reason and Politics*. MIT Press, Cambridge, MA, pp. 67–91.
- Dasgupta, P., 2001. *Human well-being and the natural environment*. Oxford University Press, Oxford; New York.
- Dasgupta, P., Sen, A., Marglin, S., 1972. *Guidelines for project evaluation*, Project Formulation and Evaluation Series. United Nations, New York.
- de Groot, R., Brander, L., van der Ploeg, S., Costanza, R., Bernard, F., Braat, L., Christie, M., Crossman, N., Ghermandi, A., Hein, L., Hussain, S., Kumar, P., McVittie, A., Portela, R., Rodriguez, L.C., ten Brink, P., van Beukering, P., 2012. Global estimates of the

- value of ecosystems and their services in monetary units. *Ecosystem Services* 1, 50–61. doi:10.1016/j.ecoser.2012.07.005
- de Waal, F.B.M., 2009. *Primates and philosophers: how morality evolved*. Princeton Univ. Press, Princeton, NJ.
- Dietz, T., Stern, P.C., Dan, A., 2009. How deliberation affects stated willingness to pay for mitigation of carbon dioxide emissions: An experiment. *Land Economics* 85, 329–347. doi:10.3368/le.85.2.329
- Dryzek, J.S., 2000. *Deliberative democracy and beyond: Liberals, critics, contestations*. Oxford University Press, Oxford.
- Elster, J., 1989. *Nuts and bolts for the social sciences*. Cambridge University Press, Cambridge ; New York.
- Elster, J., 1983. *Sour grapes: Studies in the subversion of rationality*. Cambridge University Press, Cambridge; New York; Paris.
- Elster, J., 1982. Sour grapes - utilitarianism and the genesis of wants, in: Sen, A., Williams, B. (Eds.), *Utilitarianism and beyond*. Cambridge University Press, Cambridge ; New York, pp. 219–238.
- Fishkin, J.S., 1993. *Democracy and deliberation: New directions for democratic reform*. Yale University Press, New Haven.
- Frankfurt, H.G., 1971. Freedom of the will and the concept of a person. *The Journal of Philosophy* 68, 5–20. doi:10.2307/2024717
- Goodin, R.E., Dryzek, J.S., 2006. Deliberative impacts: The macro-political uptake of mini-publics. *Politics Society* 34, 219–244. doi:10.1177/0032329206288152
- Gregory, R., Failing, L., Harstone, M., Long, G., McDaniels, T., Ohlson, D., 2012. *Structured Decision Making: A practical guide to environmental management choices*. Wiley-Blackwell, Chichester, West Sussex ; Hoboken, N.J.
- Habermas, J., 1981. *Theorie des kommunikativen Handelns*. Suhrkamp, Frankfurt am Main.
- Hahn, F.H., 1982. On some difficulties of the utilitarian economist, in: Sen, A., Williams, B. (Eds.), *Utilitarianism and beyond*. Cambridge University Press, Cambridge ; New York, pp. 187–198.
- Hammitt, J.K., 2013. Positive versus normative justifications for benefit-cost analysis: Implications for interpretation and policy. *Rev Environ Econ Policy* 7, 199–218. doi:10.1093/reep/ret009
- Harsanyi, J.C., 1977. Morality and the theory of rational behavior. *Social Research* 44, 623–656.
- Hirschman, A.O., 1982. *Shifting involvements: Private interest and public action*. Martin Robertson, Oxford.
- Howarth, R.B., Wilson, M.A., 2006. A theoretical approach to deliberative valuation: Aggregation by mutual consent. *Land Economics* 82, 1–16. doi:10.3368/le.82.1.1
- Jolls, C., Sunstein, C.R., Thaler, R., 1998. A behavioral approach to law and economics. *Stanford Law Review* 50, 1471–1550. doi:10.2307/1229304
- Kahneman, D., Ritov, I., Schkade, D.A., 1999. Economic preferences or attitude expressions?: An analysis of Dollar responses to public issues. *Journal of Risk and Uncertainty* 19, 203–35.
- Kenyon, W., Nevin, C., 2001. The use of economic and participatory approaches to assess forest development: a case study in the Etrick Valley. *Forest Policy and Economics* 3, 69–80. doi:10.1016/S1389-9341(01)00055-7
- Lienhoop, N., Bartkowski, B., Hansjürgens, B., 2015. Informing biodiversity policy: The role of economic valuation, deliberative institutions and deliberative monetary valuation. *Environmental Science & Policy* 54, 522–532. doi:10.1016/j.envsci.2015.01.007



- Lienhoop, N., MacMillan, D.C., 2007a. Valuing wilderness in Iceland: Estimation of WTA and WTP using the market stall approach to contingent valuation. *Land Use Policy* 24, 289–295. doi:10.1016/j.landusepol.2005.07.001
- Lienhoop, N., MacMillan, D.C., 2007b. Contingent valuation: Comparing participant performance in group-based approaches and personal interviews. *Environmental Values* 16, 209–232. doi:10.3197/096327107780474500
- Lienhoop, N., Völker, M., in press. Preference refinement in deliberative choice experiments. *Land Economics*.
- Lo, A.Y., 2013. Agreeing to pay under value disagreement: Reconceptualizing preference transformation in terms of pluralism with evidence from small-group deliberations on climate change. *Ecological Economics* 87, 84–94. doi:10.1016/j.ecolecon.2012.12.014
- Lo, A.Y., Spash, C.L., 2013. Deliberative monetary valuation: In search of a democratic and value plural approach to environmental policy. *Journal of Economic Surveys* 27, 768–789. doi:10.1111/j.1467-6419.2011.00718.x
- MacMillan, D.C., Hanley, N., Lienhoop, N., 2006. Contingent valuation: Environmental polling or preference engine? *Ecological Economics* 60, 299–307. doi:10.1016/j.ecolecon.2005.11.031
- 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, 49–59. doi:10.1016/S0921-8009(02)00182-9
- Meinard, Y., Grill, P., 2011. The economic valuation of biodiversity as an abstract good. *Ecological Economics* 70, 1707–1714. doi:10.1016/j.ecolecon.2011.05.003
- Mirrlees, J.A., 1982. The economic uses of utilitarianism, in: Sen, A., Williams, B. (Eds.), *Utilitarianism and beyond*. Cambridge University Press, Cambridge ; New York, pp. 63–84.
- Niemeyer, S., 2004. Deliberation in the wilderness: Displacing symbolic politics. *Environmental Politics* 13, 347–372. doi:10.1080/0964401042000209612
- Niemeyer, S., Spash, C.L., 2001. Environmental valuation analysis, public deliberation, and their pragmatic syntheses: a critical appraisal. *Environment and Planning C: Government and Policy* 19, 567–585. doi:10.1068/c9s
- Olson, G.I., Schober, B.I., 1993. The satisfied poor. *Soc Indic Res* 28, 173–193. doi:10.1007/BF01079657
- Pattanaik, P.K., 2002. Positional rules of collective decision-making, in: Arrow, K.J., Sen, A., Suzumura, K. (Eds.), *Handbook of Social Choice and Welfare*, Handbooks in Economics. Elsevier, Amsterdam ; Boston, pp. 361–394.
- Putnam, H., 2004. *The collapse of the fact/value dichotomy and other essays*. Harvard University Press, Cambridge, Mass.
- Randall, A., 2002. Benefit-cost considerations should be decisive when there is nothing more important at stake, in: Bromley, D.W., Paavola, J. (Eds.), *Economics, Ethics, and Environmental Policy: Contested Choices*. Blackwell Publishers, Malden, pp. 53–68.
- Rawls, J., 1971. *A theory of justice*. Belknap Press of Harvard University Press, Cambridge, MA.
- Reiss, J., 2013. *Philosophy of economics: a contemporary introduction*, Routledge Contemporary Introductions to Philosophy. Routledge, New York, NY.
- Robinson, J., Clouston, B., Suh, J., Chaloupka, M., 2008. Are citizens' juries a useful tool for assessing environmental value? *Environmental Conservation* 35, 351–360. doi:10.1017/S0376892908005213
- Sagoff, M., 1998. Aggregation and deliberation in valuing environmental public goods: A look beyond contingent pricing. *Ecological Economics* 24, 213–230. doi:10.1016/S0921-8009(97)00144-4

- Sagoff, M., 1988. *The economy of the earth: Philosophy, law, and the environment*, Cambridge studies in philosophy and public policy. Cambridge University Press, Cambridge; New York.
- Samuelson, P.A., 1938. A note on the pure theory of consumer's behaviour. *Economica* 5, 61. doi:10.2307/2548836
- Scanlon, T.M., 1982. Contractualism and utilitarianism, in: Sen, A., Williams, B. (Eds.), *Utilitarianism and beyond*. Cambridge University Press, Cambridge ; New York, pp. 103–128.
- Schkade, D.A., Payne, J.W., 1994. How people respond to contingent valuation questions: A verbal protocol analysis of willingness to pay for an environmental regulation. *Journal of Environmental Economics and Management* 26, 88–109. doi:10.1006/jeem.1994.1006
- Sen, A., 2010. *The idea of justice*. Penguin, London.
- Sen, A., 2008. The discipline of economics. *Economica* 75, 617–628. doi:10.1111/j.1468-0335.2007.00660.x
- Sen, A., 2001. *Development as freedom*. Oxford University Press, Oxford; New York.
- Sen, A., 2000. The discipline of cost-benefit analysis. *The Journal of Legal Studies* 29, 931–952. doi:10.1086/468100
- Sen, A., 1995. Environmental evaluation and social choice: Contingent valuation and the market analogy. *Japanese Economic Review* 46, 23–37. doi:10.1111/j.1468-5876.1995.tb00003.x
- Sen, A., 1987. *On ethics and economics*. Blackwell, Oxford; New York.
- Sen, A., 1985. *Commodities and capabilities*. Oxford University Press, Delhi; New York.
- Sen, A., 1977. Rational fools: A critique of the behavioural foundations of economic theory. *Philosophy and Public Affairs* 6, 317–344.
- Sen, A., 1976. Liberty, unanimity and rights. *Economica* 43, 217–245. doi:10.2307/2553122
- Sen, A., 1974. Choice, orderings and morality, in: Körner, S. (Ed.), *Practical Reason*. Blackwell, Oxford, pp. 54–63.
- Sen, A., 1970. *Collective choice and social welfare*. North-Holland, Amsterdam.
- Sen, A., 1969. Quasi-transitivity, rational choice and collective decisions. *The Review of Economic Studies* 36, 381–393. doi:10.2307/2296434
- Smith, A., 1759. *The theory of moral sentiments*. London.
- Söderholm, P., 2001. The deliberative approach in environmental valuation. *Journal of Economic Issues* 35, 487–495.
- Soma, K., Vatn, A., 2014. Representing the common goods – Stakeholders vs. citizens. *Land Use Policy* 41, 325–333. doi:10.1016/j.landusepol.2014.06.015
- Spash, C.L., 2007. Deliberative monetary valuation (DMV): Issues in combining economic and political processes to value environmental change. *Ecological Economics* 63, 690–699. doi:10.1016/j.ecolecon.2007.02.014
- Svedsäter, H., 2003. Economic valuation of the environment: How citizens make sense of contingent valuation questions. *Land Economics* 79, 122–135. doi:10.3368/le.79.1.122
- Szabó, Z., 2011. Reducing protest responses by deliberative monetary valuation: Improving the validity of biodiversity valuation. *Ecological Economics* 72, 37–44. doi:10.1016/j.ecolecon.2011.09.025
- Tversky, A., Kahneman, D., 1974. Judgment under uncertainty: Heuristics and biases. *Science* 185, 1124–1131. doi:10.1126/science.185.4157.1124
- Vatn, A., 2009. An institutional analysis of methods for environmental appraisal. *Ecological Economics* 68, 2207–2215. doi:10.1016/j.ecolecon.2009.04.005
- Vatn, A., 2005. Rationality, institutions and environmental policy. *Ecological Economics* 55, 203–217. doi:10.1016/j.ecolecon.2004.12.001

- Vatn, A., 2004. Environmental valuation and rationality. *Land Economics* 80, 1–18. doi:10.2307/3147141
- Wilson, M.A., Howarth, R.B., 2002. Discourse-based valuation of ecosystem services: establishing fair outcomes through group deliberation. *Ecological Economics* 41, 431–443. doi:10.1016/S0921-8009(02)00092-7