

The Landscape of Landscape Values

Conceptual and Empirical Interpretation of Economic Values in Landscape Valuation

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Abstract

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The overall aim of this thesis is to clarify relations between the value perspective of economics and other value perspectives and its significance for the interpretation of normative statements and of anomalies found in stated preference (SP) surveys. The thesis contains two papers.

The main objective of the first paper is to analyse and clarify the conceptual relations between different value-related terms. It is concluded that economic values has a clear meaning whereas other terms, often used to describe, and to motivate the preservation of, pastoral landscapes, have unclear normative implications. The economic concept of values is, in a sense, complete. Once the perspective is adopted it embraces, conceptually, all values of the pastoral landscape. With a specific interpretation of e.g. biological values these are conceptually included in the economic values. Other interpretations of biological values imply, on the other hand, perspectives of values that make economic values redundant.

In the second paper the value perspective of economics is accepted as a normative assumption for economic analyses. Instead, the theoretical analysis in the paper focuses on the possible diverging value perspectives among respondents in SP-surveys. The aim of the paper is to suggest a framework for interpretation of people's value expressions and to analyse if this framework can explain some of the anomalies found in stated preference surveys. It is suggested that people may hold values that can be interpreted as opinions about how initial rights should be distributed and that such opinions cannot be interpreted as ordinary preferences. If a stated preference survey implies a right that is incompatible with the right asserted by a respondent this may very well hinder the formation and expression of preferences. It is concluded that this incompatibility between implied and asserted rights, in many cases, can explain anomalies. This conclusion emphasizes e.g. the importance of the choice between WTP- and WTA-measures in stated preference surveys.

Keywords: values, valuation, stated preferences, anomalies, property rights, landscape

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To Helene, Ylva & Vidar

- *What is a cynic?*
- *A man who knows the price of everything and the value of nothing.*
- *And a sentimentalist, my dear Darlington, is a man who sees an absurd value in everything, and doesn't know the market price of any single thing.*

Oscar Wilde,
Lady Windermere's Fan, Act 3

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Appendix

Papers I-II

The present thesis is based on the following papers, which will be referred to by their Roman numerals:

I. Holstein, F. 1998. The Values of the Agricultural Landscape: a Discussion on Value-related Terms in Natural and Social Sciences and the Implications for the Contingent Valuation Method. In: Dabbert, S., Dubgaard, A., Slangen, L., and Whitby, M. (eds.) *The Economics of Landscape and Wildlife Conservation*. CAB International, Wallingford, pp 37-52.

II. Holstein, F. Perceptions of Rights and Environmental Valuation - Incompatible Opinions About Rights as Explanation to Anomalies in SP-surveys. (Manuscript).

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Introduction

The overall aim of this thesis is to clarify relations between the value perspective of economics and other value perspectives and its significance for the interpretation of normative statements and of anomalies found in stated preference (SP) surveys. Two kinds of relations are analysed. The first relation, investigated in paper I, is on a conceptual level; how can the economic understanding of values be related to other perspectives of values? The semi-natural grazing lands in Sweden is believed to embrace great values of different kinds and the terms used to describe those values serve as examples in the analysis of the relations between different value related terms. The second relation, investigated in paper II, has implications for some empirical economics, mainly environmental valuation and stated preference methods. When eliciting economic measures of value, i.e. willingness to pay or willingness to accept, by stated preference methods a certain distribution of property rights is implied. Respondents, on the other hand, may assert rights that can be either incompatible with, or in concordance with, the implied rights. The incompatibility between implied and asserted rights is suggested to offer a general explanation to many anomalies that previously have been found in stated preference surveys.

The two main questions are developed and analysed in papers I and II respectively. In the continuation of this introducing chapter these questions will be put into a broader context of the economics of landscape. First, the pastoral landscape will be briefly described, as a background to the analysis of the values in the landscape. Thereafter, the economic analyses of the landscape will be described in order to put the question of anomalies in stated preference (SP) methods into a broader context. Then, the two papers are summarized and finally some conclusions, remarks and questions for further research are presented.

The pastoral landscape in Sweden

The analysis of different perspectives of values (Paper I) is exemplified by the values of the pastoral landscape, i.e. the semi-natural grazing lands. These low productive lands are characterised by traditional management through continuous grazing without being exposed to yield improving measures such as fertilizers or chemical plant protection measures. This type of management has resulted in a shortage of nutrient, which in turn has formed a specific flora. The semi-natural grazing land is one of the nature types in Sweden containing the greatest number of species. Of the approximately 1 700 species of vascular plants in Sweden, about 6-700 are represented in the Swedish semi-natural grazing lands (Jordbruksverket, 1994).. In addition to containing the major part of the biodiversity of the agricultural landscape, the pastoral landscape also offers opportunities for recreation and aesthetical experiences. It also represents and symbolizes a part of the Swedish history e.g. by accommodating cultural historical elements.

Agricultural structural changes the last century has made most semi-natural grazing lands superfluous. As the yield demand of animal increased, the major part of traditional pastures have been abandoned or cultivated. The total numbers of grazing animals have decreased rapidly the last 50-80 years and high yielding arable field are used instead. Today, there are about 450 000 hectares of semi-natural grazing lands left in Sweden, compared to 2 million hectares in the middle of the nineteenth century. The fundamental condition for maintaining the, potentially valuable, services of the semi-natural grazing lands is continuous grazing. However the increasing shortage of grazing animals is threatening the biodiversity of this landscape. To preserve the remaining areas farmers are compensated through the CAP, to manage those areas by grazing. Several reports have concluded that the compensation are important to preserve the grazing lands and that without the compensation, the quantity and probably also the quality of the land, will decrease (Jordbruksverket, 2004). But would it be a *problem* if the amount and quality of the pastoral landscape decreased?

Less pastoral landscape – a problem?

Neither a description of the pastoral landscape nor any forecasts about future changes in the landscape can, alone, serve as an argument for preservation. How the semi-natural grazing land *should* be used is a normative statement that, besides the positive description, requires a value premise (Ariansen, 1992). A value premise can be thought of as a general statement about what is valuable and desirable. Since the preservation of the pastoral landscape realizes different amenities (grazing possibilities, biodiversity, recreation possibilities, etc.) and requires different resources (land, labour, etc.) a value premise should be able to take all pros and cons into consideration simultaneously if any conclusion should be possible. The state of a landscape may be regarded as a *problem* if the situation diverge from the desired situation, given a specific value premise, (Ariansen, 1992). Hence, defining anything as a problem is a normative statement that must be based on a value premise. Natural resource and environmental economics is a subject dealing with e.g. the normative question about how natural resources *should* be used and with the possibility to weigh different pros and cons. Hence, economics offers a framework, as well as methods, for answering a question about how much of the pastoral landscape that should be preserved and if the current and future situation is a problem.

The aim of this thesis is not to empirically estimate any measures of the values in the landscape. Instead, the analyses in the thesis can serve as inputs and arguments in a broader discussion about if it is i) desirable and ii) possible to estimate any economic measures of the values in the pastoral landscape. We will come back to these questions in the final section after a brief review of environmental economics and the summaries of the appended papers (I & II).

Economics of the pastoral landscape

Economics deals with two kinds of questions concerning the use of scarce resources, positive and normative respectively. Positive economics describes and analyses how human society works; e.g. the way markets and other institutions determine how scarce resources are allocated and how goods and services are distributed between consumers. Normative economics, on the other hand, deals with question about how resources *should* be used.

The general idea in normative economics is that all resources should be used so that as high values as possible are realised. Values, in the economic perspective, are realised when human preferences are satisfied. These values are approximated by the economic measures of willingness to pay (WTP) or willingness to accept (WTA). The benefits realised by a specific management of a landscape can thus be approximated by the WTP or WTA of the users. The costs are defined as opportunity costs; the value of the best alternative, non-realized, use of the resources. Hence, both benefits and costs are, ultimately, measures of the subjective values that people assign to different amenities. The best use of a specific resource is the one that maximizes the net value, i.e. the difference between benefits and costs, which normally implies that the marginal benefit should equal the marginal cost.

Natural resource and environmental economics deals with the use and allocation of natural resources, e.g. as inputs (e.g. raw materials) in production, as recipients for emissions, as amenities or as suppliers of ecosystem services. The normative assumption may be the same as in general economics but possibly complemented with sustainability¹ to explicitly take the fairness of the distribution between generations into consideration.

The economic analyses of environmental problems may be briefly summarized as follows. First, is there at all a problem, i.e. can welfare be improved (i.e. more preferences satisfied) by any modification in the use and allocation of resources? The answer of that question requires a normative description on how resources *should* be used and a positive description of how resources *are* used. Then, if there is a problem, the next analysis is to suggest possible, ultimately the best, measures. Such measures may include institutional changes that improve the function of markets as well as different kind of policy measures such as e.g. environmental taxes or standards. One base for that analysis is the explanations to why the present institutional settings, including markets and policy, have failed to attain an efficient use of resources. A recommendation to use policy measures is usually justified by the existence of market failures such as the existence of non-rival and/or non-exclusive goods.

¹ The question of sustainability is not directly analysed in this thesis. However, different opinions about sustainability among respondents to SP-surveys may very well be interpreted as opinions, about initial distribution of rights, that may influence the answer as well as the interpretation of the answers (paper II).

It is as a part of the normative analysis of how resources *should* be used that environmental valuation and stated preference methods enter the analysis. For many amenities, peoples do express their WTP or WTA on markets so that market prices can be used as measures of (marginal) values. For amenities not sold on markets there is normally no direct market behaviour that reveals peoples preferences. Instead, other methods for eliciting peoples WTP or WTA have been developed. In stated preference (SP) methods people are, to make it simple, just asked for their WTP or WTA or asked to choose between “baskets of amenities” that include a monetary payment or compensation. Since such surveys, when applied on environmental goods, are hypothetical the credibility of peoples answers have been vastly questioned among economists. The methods have however been developed and improved and the supporters maintain that the methods are sufficiently credible, especially since the alternative often is to totally overlook the value of natural resources and the environment.

Some of the questions that would be elements in a complete economic analysis of how the pastoral landscape should be managed and which institutional arrangements that would secure the efficient use of resources will be discussed in some more detail below. These are questions related to, but not developed in, the two appended papers. First, the concept of Pareto efficiency (i.e. the desired allocation of resources) and its relation to initial distribution of rights is introduced, mainly as a background to the interpretation suggested in paper II. This includes a definition of the WTP- and WTA measures and their relation to utility. Then, the probable occurrence of market failures, an argument for suspecting inefficiency and hence motivation for an economic analysis, is discussed. Thereafter follows a section about environmental valuation and stated preference methods.

Pareto-efficiency – the desired allocation in economics

The economic perspective of values can, as in paper I, be classified as a value subjective anthropocentric perspective where individual preferences, approximated by WTP or WTA, is the measures of values². To compare values between individuals the Pareto criterion and the idea of Pareto optimality is usually adopted. A Pareto optimal (efficient) situation is present when no redistribution of amenities (or production factors) can be made without making someone worse off. A specific redistribution is said to be a Pareto-improvement if at least someone gets better off and no one gets worse off and to be a *potential* Pareto-improvement if the winners (without becoming losers) potentially could have compensated the losers³. Any use of the Pareto criterion requires a reference point that often is, but doesn't have to be, the initial distribution. Pareto efficiency implies that marginal costs are equal to marginal benefits for all amenities. For a non-rival good, e.g. for many of the characteristics of the pastoral landscape, the condition becomes:

² One may, as e.g. Sagoff (1994), maintain an anthropocentric perspective that not regard preferences as normatively relevant.

³ The criterion of potential Pareto-improvement is also known as the Kaldor/Hicks-criterion and is the basic criterion for cost-benefit analysis (Randall, 1987).

$$\sum MB = MC$$

Equation 1

where $\sum MB$ is the vertically summed individual marginal benefits (expressed as WTP or WTA) and MC is the marginal cost.

There are an infinite number of Pareto efficient solutions corresponding to different initial distributions of rights and different sets of institutions and preferences (Randall, 1987). And, both the outcome of markets (Samuels, 1992) and of cost-benefit analysis (Schmid, 1995) depends on the initial distribution of rights. The question of a desired allocation and distribution of resources hence falls apart into two questions where the second is about Pareto-efficiency and the first is about how the initial distribution should be defined. Any redistribution, potentially Pareto-improvements, may therefore be labeled a *secondary redistribution* (Samuels, 1992).

On a working market the initial distribution, or primary distribution, is set and any market transactions will be Pareto-improvements. This does not mean that the concept of Pareto-optimality, *per se*, favour the status quo distribution. But as long as a project is analysed as a secondary redistribution the number of changes that can be regarded as desirable in relation to Pareto-efficiency are restricted by the initial distribution. There may be cases where rights are not defined or when the existing structure of legal rights is unclear. This is typically the situation for resources that is, or until recently have not been, considered as scarce. The semi-natural grazing lands have for long times been a by-product from grazing motivated by the production of e.g. milk and meat. Even if the consumers of the landscape qualities have not had the right to preserved pastures they have had the opportunity to enjoy those without any payment, as if they had the right. The pastoral landscape has for long time been present for the public to “consume“ and there was no scarcity experienced until the areas started to decrease and the threat against e.g. biodiversity was discovered and discussed. Even if people have not had any legal rights to a specific kind of landscape there may very well be people that assert that they have a (moral) right to a preserved landscape. A change in the management, which may be analysed as a secondary redistribution, may therefore appear as a primary redistribution (i.e. a change in rights).

As this section has shown the economic concept of efficiency, and values, is connected to on another normative question: how initial rights *should* be distributed. Even if the later question cannot be normatively judged in an economic analysis it is related to, and understandable from, the economic perspective. Moreover, it cannot be re-interpreted in terms of efficiency but is logically separated from the analysis of (potential) Pareto-improvements. Therefore, as suggested in paper II, it must be accepted that people may hold values that cannot be interpreted as preferences but should be interpreted as opinions about how initial rights should be distributed.

WTP and WTA as measures of preferences

The general condition for Pareto-efficiency was defined in equation 1 at page 11. Then, how can “benefits” be measured? So far it has been mentioned that WTP and WTA are used as measures that reflect people’s preferences. Theoretically, an accurate economic measure of value should reflect changes in peoples utility, which is done by e.g. the welfare economic measures compensating variation (CV) and equivalent variation (EV) (Ng, 1979). The measures of CV and EV and their corresponding WTP- and WTA-measures are briefly introduced in this section.

Since the pastoral landscape can be enjoyed without payment (it is a non-exclusive good) the individual faces no variable cost dependent to the amount of the good available. Hence, the situations the individual faces can be illustrated as in figure 1. In the initial situation, the amount z_0 of landscape is available and the welfare maximising individual, with income OB , chooses point E to reach the highest possible utility level, U_0 . Decreasing the amount of landscape to z_1 places the individual in a situation where point F is chosen to reach the maximal utility level U_1 .

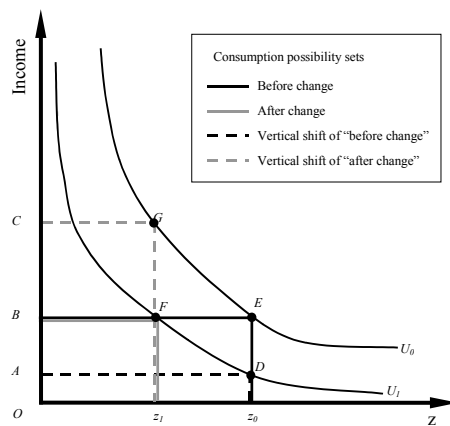


Figure 1. The welfare effects of a decreased amount of a non-exclusive good z , e.g. pastoral landscape. The value can be measured as $WTA_{CV} = BC$ or $WTP_{EV} = AB$. Notice that $WTA_{CV} > WTP_{EV}$.

To evaluate the change, i.e. to measure the change in utility from U_0 to U_1 , consider the following possible questions:

At the initial consumption possibility set ($OBEz_0$), how much income can, as a maximum, be taken from the individual without diminishing the utility below U_1 ? The answer to this question is the WTP_{EV} -measure corresponding to $ED = BA$ in figure 1. I.e., with the consumption possibility set $OADz_0$, it is possible to reach U_1 . Hence, the individuals maximal WTP, to avoid the change, is AB .

At the final consumption possibility set ($OBFz_1$), how much income must, as a minimum, be transferred to the individual to bring her back to utility level U_0 ? The

answer to this question is the WTA_{CV} -measure corresponding to $FG = BC$ in figure 1. I.e., with the consumption possibility set $OCGq_1$, it is possible to reach U_0 . Hence, the individuals minimal WTA, to tolerate the change, is BC.

The graphic illustration in figure 1 shows the connection between utility and the economic measures of value. It also shows that the reference point matters, for a certain change in landscape there may, as in the example illustrated, be a difference between WTP and WTA. The economic measures of values, CV and EV may also be formalised using a mathematical notation as in equation 2 and equation 3 respectively (following Johansson, 1993).

First, CV uses the initial utility level as reference level. This means that CV, for a decreased amount of e.g. landscape, corresponds to WTA:

$$U(q - CV, \mathbf{z}^1) = U(q, \mathbf{z}^0) \quad \text{Equation 2}$$

where $U(\bullet)$ = the initial utility of the individual (corresponding to U_0 in figure 1)
 q = all goods that can be consumed by the income of the individual (corresponding to OB in figure 1)
 CV = the change in income (corresponding to BC in figure 1) necessary to keep the individual at the initial utility level
 \mathbf{z}^i = a vector of non-exclusive goods (corresponding to z_0 and z_1 in figure 1)

Then, for EV, the final utility level is the reference level. This means that it, for a decreased amount of e.g. landscape, corresponds to WTP:

$$U(q, \mathbf{z}^1) = U(q + EV, \mathbf{z}^0) \quad \text{Equation 3}$$

where $U(\bullet)$ = the final utility of the individual (corresponding to U_1 in figure 1)
 q = all goods that can be consumed by the income of the individual (corresponding to OB in figure 1)
 EV = the change in income (corresponding to AB in figure 1) that, without the change in \mathbf{z}^1 , brings the individual to the final utility level
 \mathbf{z}^i = a vector of non-exclusive goods (corresponding to z_0 and z_1 in figure 1)

If the change in the landscape would have been an improvement then WTA would have corresponded to the EV-measure and WTP would have corresponded to the CV-measure.

Hence, there are two, both theoretically correct, measures of values for a certain change in the landscape. Which one should be used, WTP or WTA? The appropriate measure depends on property rights so that WTA is the preferred measure if the individual has the right to be spared from a deterioration and WTP

is preferred if the individual does not have that right (Carson *et al.*, 2001; Bromley, 1995; Gregory *et al.*, 1993). However, in practice, the WTA-measure is seldom used since the rate of refusals is higher and the estimated WTA are regarded as too high (Arrow *et al.*, 1993; Kahneman *et al.*, 1990; Peterson *et al.*, 1995).

Market failures and the pastoral landscape

A general conclusion in economics is that working markets are efficient, i.e. they lead to Pareto-optimal allocation since peoples' preferences (or more, accurately, their WTP or WTA) are expressed through their market demand. However, a general conclusion in environmental economics is that market failures tend to lead to inefficient allocation of goods or resources that are non-exclusive and/or non-rival (Randall, 1987). Since lots of the services provided by the pastoral landscape are characterized by non-exclusiveness and/or non-rivalry it is, to answer the question raised previously, very likely that a market solution would have provided an insufficient amount and quality of semi-natural grazing lands.

Non-exclusiveness can be due to political or cultural circumstances, or basic characteristics of the goods or resources (Randall, 1987). The aesthetic qualities of a landscape is non-exclusive partly because of its basic characteristics, it is impossible (or at least very expensive) to exclude someone from just looking at a landscape. The recreation possibilities are, on the other hand, non-exclusive as a consequence of the Swedish "allemansrätt", the Right of Common Access (to private land), which makes it possible for everyone to enjoy the beauty of a landscape. In this case the non-exclusiveness is a result of Swedish cultural circumstances. The biodiversity is another example of a non-exclusive component of the landscape. It may, partly, be a part of a life supporting system. In this case, the non-exclusiveness is explained by the basic characteristics of the service. Non-exclusiveness means that consumers have incentives to free-ride, which means that producers will have problems to get enough paid to compensate their costs of production.

Non-rivalry is a physical attribute of the resource; one person can "consume" without diminishing other persons' possibilities to consume and derive utility from the resource. Therefore it is impossible to make an institutional choice whether, for example, the beauty of a pastoral landscape or the biodiversity should be treated as a non-rival good or not. To maximise the utility nobody should be excluded from using a non-rival good. Hence, even if it were possible and cheap to hoard a landscape it would not be an optimal solution even if the private producer would maximise his profit. When some of the consumers act as free-riders the producer will generally not get enough paid to produce/preserve an efficient amount of the good or service.

It can now be concluded that economics offers a tool to describe a situation as a *problem*. Moreover, there are good reasons to believe that a deterioration of the quantity and quality of semi-natural grazing lands is a problem since many of the valuable services are characterised by non-exclusiveness and non-rivalry. This

means that the potential values that people ascribe those services will not be taken into account by markets. However, a final judgement requires empirical estimates of the magnitude of the values people potentially place on the landscape. As mentioned before, when no market prices are available, such estimates must be done with other valuation methods.

Valuation methods

Since the introduction of the “new welfare economics” when Hotelling (in 1938) suggested that consumer and producer surplus, and not the price, was the relevant welfare criterion there has been a need for estimation of demand, and supply, functions. The analysis of non-rival goods, presented by Samuelson the same year, emphasized, the conclusion that amenities without prices, intangibles, eventually could be assigned an estimated value, namely if there were other methods to detect the demand and supply function. This new perspective of economic values opened up for valuation methods using other data than the market price for the amenity to be valued. Two approaches can be distinguished, namely indirect and direct methods. The idea of both of them is that even if there is no demand expressed on a market there can very well exist a *latent* demand curve possible to elicit through other methods. Two methods, the contingent valuation method (CVM) and the travel cost method, representing direct respectively indirect methods, were both first proposed in 1947. Harold Hotelling suggested that the value of national parks could be estimated using the expenditures visitors made in the form of e.g. travel costs. Ciriacy-Wantrup suggested, in a paper on the economics of soil conservation 1947, that people may be asked how much money they are willing to pay for an additional amount of a good. Contingent valuation was first used in 1963 when Davis conducted a study on the value of recreation (Hanemann, 1995).

The indirect methods, also referred to as revealed preference (RP) methods, require actual markets where the preferences can be revealed through actual behaviour. The central idea is that there are relations between the consumption (or the supply) of the commodity that should be evaluated and other goods bought and sold on markets. Hence, if there are goods that are either substitutes or complements, market data from those markets can be used for evaluation of the good. Examples of RP-methods are the travel cost method and the hedonic price method. Since these methods are not capable of eliciting any non-use values they are assumed to be less useful for valuing landscapes where, for example, the function for preservation of biodiversity can be ascribed a, partially, non-use motivated value.

Since many of the values associated with preservation of pastoral landscapes are pure non-use motivated values, e.g. existence motivated values, the revealed preference methods are of less use. Therefore, there is a need for other methods, capable of eliciting also non-use motivated values such as direct methods as stated preference (SP) methods or experiments. Among the SP methods can contingent valuation, contingent ranking, conjoint analysis and choice experiments (Adamowicz, 1995; Boxall *et al.*, 1996). The distinctions between the different SP

methods are often unclear but the thesis deals with some general problems with SP-methods, which, here, makes any distinctions unnecessary.

The main advantage with stated preference methods, such as CVM, is the possibilities to elicit non-use motivated values (Carson *et al.*, 2001). On the other hand, the main problem with CVM, as an example of SP methods, has even since the beginning been the question whether hypothetical questions can generate reliable estimates of true preferences. Among the potential problems are insensitivity to scope, anchoring effects, sequence and context effects and strategic behaviour. To handle these and other problems there has been an ongoing discussion on the incentive compatibility of different elicitation format. One way of describing the problems in SP-surveys is though that they can be explained by biases that are results of imperfect elicitation methods. Another interpretation is that SP-surveys have pointed out different anomalies, systematic deviations between human behaviour and economic theory (Sugden, 2005). In that perspective, it may not be imperfect valuation methods that are the problem, but rather the assumptions in economic theory. This is where paper II starts; can the anomalies be generally explained by assuming that people may hold and express opinions about how initial rights should be distributed?

Summaries of appended papers

In previous section the economics of landscape was briefly introduced. It should be clear that there are lots of questions regarding the values of the semi-natural grazing lands that are not analysed in this thesis. The aim of the previous section was to put the questions that are analysed in the appended papers (I & II) into a broader context. In this section the appended papers are summarized.

Summary of paper I

In paper I the value perspective of welfare economics is put into a broader value theoretical perspective and related to some other (non-economic) value-related terms. The main objective of the paper is to place different value related terms into a common value theoretical framework, and thereby improve the possibility to understand the relations between the terms.

One rationale for the purpose is the extensive use of different value-related terms in the debate regarding the changes of the agricultural landscape. It is e.g. stressed that these changes threat biological, cultural historical, recreational, economic and aesthetical values attached to the landscape. However, as an analysis in the paper shows, the meanings of the value-related terms are often unclear. This means that the relations between the terms also are unclear and that comparisons between different values becomes more or less impossible which, in the end, may result in less suitable policy measures.

The analysis of the terms shows that clear connection to theory of values often is missing. It is suggested that many value-related terms do not have a clear normative meaning and that such terms would be clearer if the word “value” would be omitted. I.e. instead of “biological values” terms as, e.g., “biological functions” and “biological objects” (which both may have value) will improve the understanding.

The term “economic value” has however, at least for an economist, a clear and normative meaning. The term indicates a clear anthropocentric value subjectivistic perspective and it is possible to interpret other value related terms within that perspective. E.g., biological functions may have an economic value. To emphasize that other values not should be added to the economic value the term Economic Measure of Total Value (EMTV) is suggested.

The analysis shows that it is important to be clear on the definition of values. An economic analysis implies a specific value perspective that, in principle, comprises “biological values” if that term refers to “biological objects” or “biological functions”. In that case no biological values should be added to the economic value. Of course, some values may, in practice, be hard or impossible to measure. In that sense it can be said that “the (economic) value of some biological objects should be added to an incomplete estimation of an economic value”.

The economic value does not, on the other hand, comprise “biological values” if that term refers to “intrinsic biological values”. Neither in that case can the “biological values” be added to the economic value since the values, interpreted in this way, are logically incommensurable.

Summary of paper II

In paper II the value perspective of welfare economics is accepted as a normative assumption for economic analyses. Instead, the theoretical analysis in the paper focuses on the possible diverging value perspectives among respondents in SP-surveys. More generally, the main aim of the paper is to suggest a framework for interpretation of people’s value expressions and to analyse if this framework can explain some of the “anomalies” found in stated preference surveys (e.g. the occurrence of lexicographic preferences, protests, preference reversals and respondents opposing the economic interpretation of WTP- or WTA-answers).

The rationales for the purpose are two. The first is to try to find a common explanation and understanding for different anomalies, i.e. value-expressions that do not fit into economic theory, that so forth have been explained by diverging *ad hoc* explanations. The second rational is the conclusion from paper I that, from the economic perspective, many different value perspectives can be interpreted as opinions about the initial distribution of rights.

The framework is based on three assumptions. First, that people may have opinions about how initial rights should be distributed. Second, that acceptance of property rights is a necessary precondition for preference formation. And, third,

that property rights may be accepted only if they i) cannot be affected or ii) in case they can be affected if they are regarded as morally legitimate.

From these assumptions it is concluded that SP-surveys place people in a situation where they may perceive that property rights can be affected and where they may find the implied rights (morally) illegitimate. Hence, the implied rights may not be accepted and consequently the respondent may not have formed any preferences and can therefore not express any (relevant) WTP or WTA. However, since she may have opinions about how the rights should be distributed she may take the opportunity to express this value. In the paper it is stressed that such value expressions should be interpreted as non-preferential value expressions and that such an interpretation can serve as a general explanation to different anomalies.

Hence, if respondents should express preferences (or rather WTP/WTA measures) in SP-surveys it is crucial that they, at least conditionally, accept the rights implied by the WTP- or WTA-question respectively. E.g. a WTP-question implies that the respondent does not have the right. If the respondent confronted with such a question, asserts that she has, or should have, the right, she may report this opinion instead of any WTP-measure based on preferences. This means that concordance between (by the question) implied rights and (by the respondent) asserted rights is necessary for the formation and expression of preferences. In case of incompatibility no preferences may be formed. This can explain previous anomalies, such as refuses to answer, protests or “lexicographic preferences”.

Possible asserted rights are categorized into five classes and the possible reactions to SP-surveys are discussed in relation to WTP- and WTA-questions. The result of the analysis is, as summarised in table 1, that perfect concordance will occur only in two or three out of ten cases of combinations between implied and asserted rights.

Table 1. *Relations between asserted and implied rights. INC (incompatibility) means that respondents may have problems to form preferences and CON (concordance) means that preferences may be formed.*

	Respondent asserts that she has the right		Respondent asserts that other party has the right		Respondent asserts that “third party” has private or collective right
	Privately	Collectively	Privately	Collectively	
WTP-quest.	(I _{WTP}) INC	(II _{WTP}) INC	(III _{WTP}) CON	(IV _{WTP}) INC	(V _{WTP}) INC
WTA-quest.	(I _{WTA}) CON	(II _{WTA}) INC	(III _{WTA}) INC / CON	(IV _{WTA}) INC	(IV _{WTA}) INC

This result offers an argument against the recommendation to always use the WTP-format. Moreover, for amenities where the respondent asserts collective rights, both the WTP- and the WTA-question imply rights that may be incompatible with the asserted rights. This means that, for many environmental

goods, neither the WTP- nor the WTA-question may imply rights that can be accepted by the respondents. If a right means that the owner explicitly must agree on selling, and if people assert that future generations, that cannot agree explicitly, have rights, then respondents may refuse to get involved in any (even hypothetical) exchanges at all.

Conclusions, comments and future research

Finally, are there any general conclusions from the two papers? Two questions, which could have been raised by e.g. a policy maker, were introduced above: is the elicitation of economic values i) desirable and ii) possible. Of course there is no final answers to such questions but the analyses of this thesis may serve as input into an ongoing discussion about these and related questions.

Conclusions about the concept of values

Whether the elicitation of economic measures of values is desirable depends, ultimately, on if one agrees on the normative assumptions of economics. The economic concept of values is, in a sense, complete. Conceptually it embraces, once the perspective is adopted, all values so that a normative weighing, where all effects of a change in the pastoral landscape are considered, can be made. In practice, empirically, there may still be problems to elicit the economic measure of value, due to methodological shortcomings. On a conceptual level this is however not an argument against the desirability of eliciting economic measures of values, at least as long as methods can be improved to reduce the problems. Then, if the economic concept of values is complete, can other perspectives of values, other value premises than the economic, be regarded as redundant? The answer is no.

First, the choice of value perspective is an important normative question and there are no objective arguments for why the economic perspective is better, or worse, than any other perspective of values. In all analyses some assumptions have to be done and all normative analyses must be based on a value criteria, i.e. a normative assumption about what constitutes values. It is therefore legitimate to adopt an economic perspective by making a normative assumption that preferences should count. It is however important to be aware of that it is normative assumptions that is the base for the analysis and to be aware of which perspective of values one thereby have adopted. Paper I presents a value theoretical framework that can be used to clarify which normative assumptions the choice implies and other value-related terms can be understood from this perspective. It is important to be clear about when other “values” are included in the economic value and when they are not. If one doesn’t agree on the normative assumptions in economics, it doesn’t matter that the concept is complete; it may simply be rejected as irrelevant.

Second, since individuals may defend other perspectives of values, the result of empirical economic analyses may depend on values that logically cannot be interpreted as preferences. The conclusion in paper II is that incompatibility

between implied and asserted rights can explain a lot of the anomalies found in SP-studies. It is therefore, even if the economic perspective of values is preferred and adopted, important to have some understanding of non-economic perspectives of values.

Conclusions about empirical elicitation of values

Whether it is possible to elicit (correct) economic measures of values is a question that has been discussed in relation to SP-methods as long as the methods have been used. This thesis does add some arguments to that discussion.

The conclusion from paper II is that people, if they don't accept the implied rights, may choose to express opinions about the initial rights. Hence, if the implied rights deviate from legal rights or from what people believe is morally legitimate it may be difficult to make people form and express preferences. One way of avoiding this is to emphasize that the implied rights are in force and cannot be affected. This may however be difficult as long as the scenario is hypothetical. Another way may be to offer an explicit possibility to express opinions about rights which means that respondents do not have to express these views when answering the WTP/WTA-question. When having had the possibility to express the opinion about the distribution of rights, it may be easier to accept the implied rights and hence to (at least conditionally) form and express preferences related to these rights. However, as concluded in paper II, it may just as well be that such an explicit question on opinions about initial distribution of rights could make more respondents more reluctant to express preferences. How people actually would react is an empirical question, and hence a question for further research.

From paper II it can be concluded that there is a risk for incompatibility between implied and asserted rights in a majority of the analysed cases. For amenities with collective rights, as asserted by the respondent, both the WTP- and the WTA-question imply rights that may be incompatible with the asserted rights. This means that, for many environmental goods, neither the WTP- nor the WTA-question may imply rights that can be accepted by the respondents. If it is not possible to convince people about that implied rights are legitimate, or not possible to affect, the conclusion is that it may be impossible to elicit a correct measure of economic values for amenities where respondents assert that e.g. future generations have rights.

Another conclusion, based on the analysis in paper I, is that opinions about the initial distribution of rights may be regarded as relevant information in itself. It may be regarded as an at least as important input in the political process as information about preferences. It should be noted, as concluded in paper II, that also individuals actually stating a WTP or WTA may assert a distribution of rights opposite to the implied but may choose to conditionally answer the WTP/WTA-question. Supplementing the surveys with an explicit possibility to express opinions about the primary distribution question means that important information about the values people hold can complement the information about preferences. In that sense, the result of a survey may help, e.g. politicians, also to answer the

question whether the elicitation of economic measures of values is desirable or not.

Comments and further questions

The aim of paper II was to suggest a framework that could offer a general explanation to different anomalies. The conclusion was that the suggested assumptions did offer a framework from which at least the anomalies discussed in paper II could be explained. Questions for further research are if the framework can explain other anomalies as well and whether some empirical testing can be made to “verify” the framework suggested in paper II.

The WTP/WTA-disparity – some comments

Another anomaly, that has not been discussed and analysed here, is the disparity between WTP and WTA. If that anomaly also can be interpreted as an outcome of the incompatibility between implied and asserted rights is a question for further research. Some comments will, however, be made. Why is minimum willingness to accept (WTA) to forgo an amenity often found to drastically exceed maximum willingness to pay (WTP) to receive the same amenity? A number SP studies have shown disparities between elicited WTP and WTA for the same goods (Horowitz & McConnell, 2002). A disparity can, generally, be explained as i) an effect of biases in the elicitation mechanism, ii) as an effect of the structure of the underlying preferences or iii) as a combination of those effects. The discussion concerning the structure of the underlying preferences has lately been centred on if the substitution effect or the endowment effect⁴ will explain the disparity (Hanemann, 1991; Morrison, 1997; Shogren & Hayes, 1997). Different possible explanations to the disparity have been suggested. Randall and Stoll have argued that the **income effect** is the only possible explanation to a disparity but that the income effect is supposed to be small or zero for all goods (Randall & Stoll, 1980). Hence, no significant WTP/WTA disparity should be expected due to the income effect. However, Hanemann has argued that even a very small income effect combined with a **substitution effect**, results in a significant, possibly infinite, difference between WTP and WTA (Hanemann, 1991). This theoretical result has been supported by experimental results (Shogren *et al.*, 1994) and the substitution effect is today a widely accepted explanation to why WTA often is found to significantly exceed WTP. Others have been arguing that a disparity is to be expected due to an **endowment effect** (Knetsch, 1989; Kahneman *et al.*, 1990). Also other explanations have been suggested, e.g. **imprecise preferences** (Dubourg *et al.*, 1994; Morrison, 1998), and **learning effects** (Morrison, 1998). Since the use of WTP or WTA implies different rights it is possible that the framework suggested in paper II can be used to, at least partly, explain even the WTP/WTA disparity.

⁴ The endowment effect is an effect of asymmetric evaluations of gains and losses, i.e. the direction of proposed trading matters (Knetsch, 1989).

The discovered preference hypothesis – some comments

In paper II it is suggested that acceptance of property rights is a necessary precondition for preferences formation. This assumption of course contradicts the assumption of complete preferences. The occurrence of anomalies is however a reason for questioning that assumption. One way is to, as made in paper II, assume that preferences are *potentially* complete. Another interpretation is discussed by e.g. Braga & Stramer (2005). They suggest that preferences *are* complete but that it takes some training, for a person herself, to discover them. This is the Discovered Preference Hypothesis (DPH). According to DPH, as interpreted by Braga & Stramer, people are equipped with stable and context free underlying preferences with standard characteristics. Then the anomalies becomes errors relative to the underlying preferences, i.e. it is not the preferences that does not fit into the standard theory but rather that people doesn't have the ability to express their true preferences until they have discovered them. From that assumption, Braga & Stramer suggest that the anomalies, rather than contradicting standard theory, are errors in SP-methods that can disappear if people become more experienced in relevant decision environments. It is stressed that some of the anomalies decay if decisions are repeated and if real incentives are offered. Can this explanation, as the *ad hoc* explanations discussed in paper II, be incorporated to the framework suggested in paper II? This is a question for further research but a preliminary answer is that it can be partly incorporated.

Real incentives mean that property rights are less unclear and not questionable. Therefore, when real incentives are introduced there are, according to the analysis in paper II, fewer arguments for expressing opinions about initial rights.

Hence, there are two competing hypotheses about how it comes that people seems to not know their own preferences, preference construction and DPH. The framework suggested here is closest to the idea of constructed preferences but it may, slightly reinterpreted, be compatible with the DPH. On one point is the analysis in paper II, however, incompatible with the DPH. In paper II it is assumed that acceptance of property rights is a necessary precondition for preference *formation*. Hence, it is implicitly assumed that preferences are not complete, which is an explicit assumption under the DPH. Whether the preferences are "discovered" or "formed" is partly a semantic question. Preliminary, the framework suggested in paper II might be compatible with DPH if assumption 2 is reformulated:

Assumption 2b. Acceptance of property rights is a necessary precondition for discovering preferences.

Whether this preliminary conclusion holds is a question for further research.

Empirical testing

Some of the results of this thesis are about different ways of interpreting certain observations. It is, for example, suggested that interpreting certain answers as opinions about initial rights is a better interpretation than to interpret them as

lexicographic preferences. One may ask people directly about which interpretation that is closest to their intentions but since it is interpretations it may be more interesting how they fit into a theoretical framework; it is not primarily an empirical question.

Nevertheless, some empirical research can be done. It is possible to test if an explicit question about the initial rights affects as well the rate of answer as the WTP- or WTA-measures. It is also possible to perform a meta-study where it is investigated how the “grade of reasonability” of the implied rights have affected the results of previous studies. This is, however, questions for future research.

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I



The Values of the Agricultural Landscape: a Discussion on Value-related Terms in Natural and Social Sciences and the Implications for the Contingent Valuation Method

Fredrik Holstein¹

INTRODUCTION

The agricultural landscape of Sweden is changing. In the middle of the nineteenth century, there were about 2 million ha of seminatural grazing land; today about 300,000 ha remain. Of the 2 million ha of meadows present at the beginning of the nineteenth century, 2500 ha remain. The threat to such landscapes is also a threat to the biological, cultural-historical, recreational, economic and aesthetic values attached to them (Jordbruksverket, 1994, 1995). The threat to these values can motivate policy measures, which, in turn, can motivate the estimation of the values. To formulate relevant policy goals, the values must be expressed and compared with each other and with other values, in some acceptable way, which, as a start, requires that the significance of the terms is understood by all actors.

An analysis where value-related terms are compared with value-theoretical concepts shows, however, that the meanings of the terms are unclear. Hence, there is a risk of confusion, resulting in less suitable policy measures, and thus a need for more precise terminology for describing the values of the landscape.

The first objective of this chapter is to analyse some value-related terms from a value-theoretical view. How can the different value-related terms be interpreted? Should economic, biological, cultural-historical, recreational and aesthetic values of a landscape be added to obtain the total value of the landscape? Or do the different terms indicate different perspectives of value which might not be compatible? Brown (1984) states that 'only when economic value measures are placed in perspective do their nature and shortcomings come

clearly to light'. This is true also for other concepts of value. The intention of this chapter is to broaden the discussion and to make interdisciplinary discussions easier. This should lead to better communication between scientists representing different disciplines, politicians, administrators, farmers and the public. Better communication increases the possibilities for better policy instruments and more of the values, however we choose to define them, of the agricultural landscape can be preserved.

The second objective of the chapter is to discuss the complications of different perspectives of values when applying the contingent valuation method (CVM). The analysis of CVM-related problems is concentrated on the problems of different views of values, but also the problems connected with the distribution of property rights among the respondents is briefly discussed. Other problems, such as the choice of questioning modes and econometric techniques when applying CVM, are not discussed.²

WHAT IS A VALUE?

The preservation of or changes in landscapes can be motivated by the values attached to them. In fact, as Lockwood (1997) states, 'value assessment is a necessary component of any rational decision-making process concerning the use or management of natural areas'. By different use of the landscape, different landscape-related values will be realized and, since every landscape-management act requires resources, there is always an opportunity cost – that is the resources used for managing the landscape could be used to realize other values. So the question of values is crucial for any rational decision about how the landscape should be used. But what do we mean by the term 'values'? The question of values has been discussed by, among others, philosophers and economists for hundreds of years and it is not surprising that the term has many meanings (Brown, 1984).

Different attempts to describe values have been made. Brown (1984) distinguishes three uses of the term. The first meaning is the purely mathematical, as in the expression 'the value of a variable'. The second meaning concerns physical or biological relationships and can be described as 'functional value relationships' (Andrews and Waites, 1978, cited in Brown, 1984). The third meaning, which Brown is concerned with, is 'the preference-related concept of value'. Brown also distinguishes between held values and assigned values: 'the preference relationship between a person and an object, given the person's held values, results in different objects' assigned value'. The economic measures of value are a set of assigned values. Lockwood (1997) distinguishes between intrinsic, functional and instrumental values. Intrinsic values are interpreted as end values. The term functional values has the same meaning as Brown's 'functional value relationships'. If this functional relationship contributes to

the realization of some end value, the process or the entity will have an instrumental value.

Both Brown (1984) and Lockwood (1997) are concerned with human values. However, there are other ways of interpreting values, in the sense that something is better than something else. Lockwood admits the possibility that species other than humans have end values and that these, if that is the case, should be included in an extended ecological economic analysis.

In the following, some value theoretical concepts will be presented. The concepts are mainly based on Ariansen's 'environmental philosophy' (Ariansen, 1993). The concepts will thereafter be used to analyse some value-related terms often used to describe the landscape and to motivate policy instruments toward the landscape.

Value Statements and Descriptions

First, the distinction between a value statement and a description should be clarified. It was pointed out by David Hume that it is not possible to make value statements from pure descriptions. Any value statements made without a value premiss are said to be a 'naturalistic fallacy' (Ariansen, 1993).

Assume that there will be some degradation in biodiversity if the current 300,000 ha of seminatural grazing lands and meadows are not preserved in Sweden. From this description, we cannot say if the current areas should be preserved. To be able to draw a conclusion like that, we need a value premiss, such as 'all biodiversity should be preserved'. The value premiss is an indicator of the viewpoint; in this case, the landscape might be seen as a part of the ecosystem. From the value premiss 'all biodiversity must be preserved' and a (here assumed) knowledge that there will be losses in biodiversity, one can, without any logical mistakes, conclude that the current 300,000 ha of seminatural grazing landscape should be preserved.

It should be mentioned that the distinction made above is rather problematic. Are there any pure descriptions, neutral to valuations? It can be argued that the way we observe and describe the world depends on our valuations. Even the language might be constructed from valuations; we have chosen to construct words for those phenomena that concern us in some way. The fact that there is a word for biodiversity indicates that we are (or at least someone is) interested in biodiversity: the phenomenon is relevant. It does not, however, tell us whether biodiversity is good or bad. Even if the distinction is not obvious it will, even in the following, be assumed that it is possible to distinguish 'is' from 'ought'.

Due to this distinction, the term 'functional value relationships' is not a value statement at all but rather a description.

Value Objectivism and Value Subjectivism

The next question concerns the nature of values. Are values a part of the objects or are they in ‘the eye of the beholder’? The question indicates two different perspectives on values: the value-subjective and the value-objective perspectives. According to the value-subjective perspective, values are ‘created’ by the subject. This is the perspective of, for example, Brown (1984), when he states that ‘value is neither a concept held by the subject nor something attributed to the object, but merely that which arises from the preference of a subject for an object’. However, the relation between the subject and the object does not necessarily have to be in the form of preferences. According to the value-objective perspective, values are properties of the objects, just like length and weight. In the view of the philosopher Holmes Rolston III, for example, there are objective intrinsic values. These values can be seen as potentials, which can be realized by someone experiencing them (Anderberg, 1994). Here, the term intrinsic value is used to describe the value-objective perspective.³

The value-subjective perspective is often combined with the view that humans are the only valuing subjects.⁴ However, here it is stressed that these are two different questions and it is possible to think of subjects other than human beings.

When it comes to human decision-making, the perspective of values defines the role for humans. The conclusion is that there are three possible roles for humans:

1. As the only relevant valuing subjects.
2. As valuing subjects and as interpreters of, for example, other species’ valuations.
3. As interpreters of objective intrinsic values.

Roles 1 and 2 follow from different value-subjective perspectives and role 3 follows the value-objective perspective. The traditional welfare-economic analyses assume role 1 for humans. This means that it will be difficult to accept the results of a welfare-economic analysis, or any other analysis with an anthropocentric value-subjective perspective, if one prefers role 2 or 3 for humans.

Instrumental Values and End Values

No matter how we have defined values, as objective or subjective, something can be valuable because it serves some other value; it then has an instrumental value. The other value, realized by the instrumental value, might also be an instrumental value. This chain of instrumental values can be long, but not infinite. Somewhere there must be an end and those values are here called end values. An end value can either be motivated as a subjective value or as an

objective intrinsic value. If every species has an intrinsic value and if the agricultural landscape is crucial for the survival of at least one species, the landscape has an instrumental value in relation to the end value of that species (Ariansen, 1993; Lockwood, 1997).

Subject Motives, Groups of Objects and Functions

A hypothesis of this chapter is that many of the value-related terms used for motivating policy measures toward the landscape have an unclear connection with the theory of values. It would probably be difficult or impossible to relate them to the value theory presented above. A further classification is therefore needed. The one presented here follows the logic of Hasund (1991), with small modifications of the terms.

Subject motives for valuation describe the motives of the valuing subjects. The value of a landscape can (adopting the anthropocentric value-subjective perspective) be motivated by the possibility of using the landscape (for example, recreation) or by the subject enjoying the pure existence of the landscape. Using the terminology proposed here, the values are user-motivated values and existence-motivated values, respectively.⁵

Groups of objects of value refer to a class of objects. The objects of this group might have value motivated from the value-subjective perspective or from the value-objective perspective.

Functions refer to the relationship between phenomena and the term is used here with the same meaning as 'functional value relationships', as used by Brown (1984). In the cases where an object has a function for a subject, this is described as subject motives. Hence, the term functions is used to describe relationships between objects. Since those relationships do not have to indicate any value statement, the term value is avoided. Those functions can realize values either directly or indirectly. A specific species can, for example, have a function in an ecosystem. If that species is essential for the survival of other species that are of value, it will have an instrumental value.

VALUE-RELATED TERMS AND THE THEORY OF VALUES

In the introduction, some value-related terms were mentioned. Those terms – biological, cultural-historical, recreational, economic and aesthetic values – are analysed here, using the terminology presented in the previous section. The question is whether the terms indicate any specific perspectives of value or if they have to be interpreted from different perspectives. Moreover, is it possible to understand them from a common perspective, for example from a welfare-economic perspective?

Aesthetic, Recreational, Cultural-historical and Biological Values

The term aesthetic value does not indicate if the perspective is value-objective or value-subjective. The term can be interpreted from the value-objective perspective if there is such a thing as objective beauty. To clarify the perspective in that case, the term intrinsic aesthetic value can be used. Another interpretation, from the value-subjective perspective, is that the term aesthetic value describes a subject motive, for valuing, for example, a meadow, and hence describes an aesthetic motivation for the valuation.

The term recreational values must be understood from the value-subjective perspective; it is hard to think of any intrinsic recreational values. However, the term seems to refer to a subject motive, a user-motivated valuation. The term recreation-motivated valuation would indicate the perspective.

The term cultural-historical value also seems to have weak connections with the value-theoretical concepts presented above. The most reasonable interpretation is that the term describes a group of objects, objects regarded as cultural-historic in some sense. A cultural-historic object does not necessarily have to be of value. The fact that someone pays attention to that object will often indicate that he or she cares about it and the value statement can be implied. However, a more stringent description would be to use the term cultural-historical object of value.

The term biological values can be interpreted from quite different perspectives; hence it is likely that misunderstandings will occur if the intended meaning of the term is not clarified. One interpretation is that the term refers to a group of objects, biological objects of value. In this case, the values can be value-subjective as well as value-objective; the term does not imply any specific value-theoretical perspective.

The term can also refer to biological functions of value. If a species has a crucial function in an ecosystem, which has a value (for example, user-motivated), that species will have an instrumental value. This illustrates why knowledge about ecological functions is essential for valuations of, for example, meadows, even if an anthropocentric value-subjective perspective is adopted.

The term might also be used to describe the value of, for example, herbs indicating the presence of other, for some reason, valuable species or habitats. In this case, it seems more stringent to use the term function. The herb in question has an informational function. This function will have a value, an instrumental value, if the use of the information realizes some other value.

Finally, the term can be used from the value-objective perspective if it is assumed that all biological life has an intrinsic value. To clarify this perspective, the term intrinsic biological value can be used.

Economic Value

The term economic value seems to have a rather clear meaning in relation to the value-theoretical concepts. The perspective is value-subjective and the only relevant valuing subjects are humans. Values are derived from human preferences and can be approximated by consumer and producer surpluses. The total economic value (TEV) is understood as the aggregate of all user-motivated and non-user-motivated values (Pearce and Turner, 1990).

It has been argued, by Gren *et al.* (1994), that the concept of TEV does not capture the total value of the ecosystems. Gren *et al.* (1994) use the terms primary and secondary values, where primary values refer to the self-organizing capacity of the ecosystems. Those primary values are not, according to the authors, captured in the TEV. Secondary values refer to the production of goods and services. In the view of values adopted in this chapter, those terms seem to be misleading, since the distinction is made without any clear connection to the theory of values. It is suggested here that the terms primary functions and secondary functions are more useful in this context. From the welfare-economic perspective, the primary functions will then have values, recognized either as instrumental values (if those functions are necessary for any secondary functions appreciated by humans) or as end values (if someone finds an existence-motivated value in the functions themselves).

As long as the welfare-economic perspective is adopted, the concept of TEV captures all values. But that is a different question: the total value will probably never be elicited in practice. If the viewpoint is changed (to, for example, non-anthropocentric and/or value-subjective), other values will be found, but at the same time the concept of TEV will lose its meaning. So, if the values of the agricultural landscape are described from two (or more) viewpoints, those values cannot be added together! The different analyses should rather be seen as different pictures of the same reality: the viewpoints are complementary but the resulting values are not!

In debate, economic value is often interpreted as a value to be summed up to other values. This seems to be the case in some publications from the Swedish Board of Agriculture (Jordbruksverket, 1994, 1995), where different values are described as if they should be added together. One possible explanation is that economic value is interpreted as market price or the profit of the farmer. Jones (1993) distinguishes three types of economic value, one of which is market value.⁶ In his discussion about different types of values associated with the landscape, it is clear that economic values (market values) are not interpreted as a concept for describing the total value. The term TEV does not seem to solve this problem. Maybe the term economic measure of total value (EMTV) would be more informative? This term emphasizes, contrary to TEV, that it is the total value and, hence, that nothing more can be added.

Value-related Terms from the Welfare-economic Perspective

In the previous section, some value-related terms were interpreted from the value-theoretical perspective presented earlier. It was concluded that many of the terms have rather unclear connections with the theory of values. However, welfare economics offers one possible way of describing values. If this perspective is chosen, is there still a meaning in the other value-related terms or do they have to be interpreted from other perspectives? The analysis above has shown that there are possibilities for interpreting them in a way which should be compatible with the welfare-economic perspective. In this section, the values of landscape are described from the perspective of welfare economics and the other value-related terms are interpreted so that they fit into that perspective. As should be clear from the above, this does not mean that these interpretations are the only correct ones.

Figure 4.1 illustrates an agricultural landscape, for example a seminatural grazing landscape. The value premiss is the satisfaction of human preferences. How can the values of the landscape be described if we adopt the welfare-economic perspective?

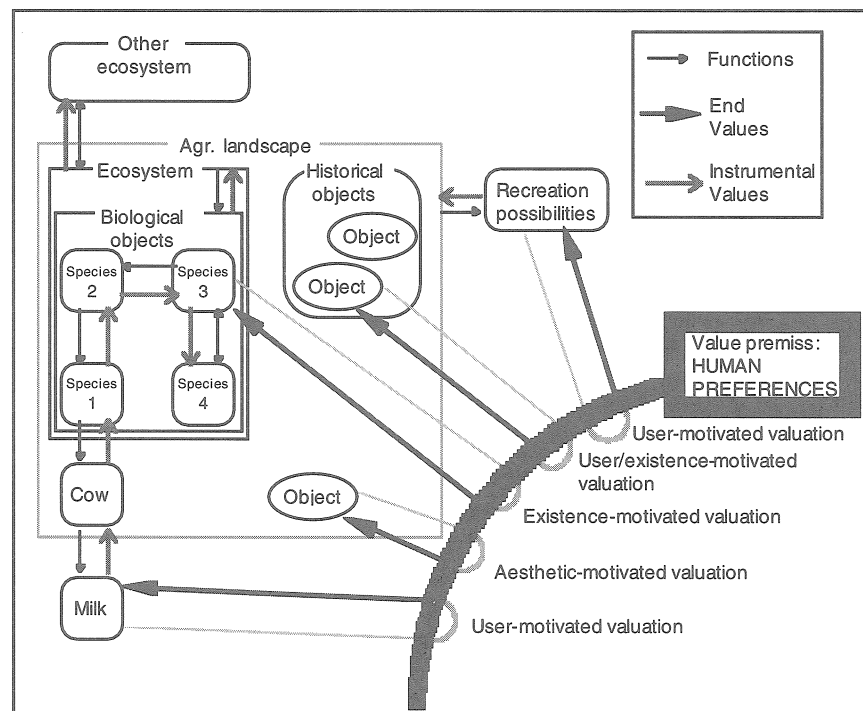


Fig. 4.1. The values of the agricultural landscape from a welfare-economic view.

To start with the value of species, it can be seen that the very same species can have an instrumental value and an end value. This is illustrated by species number 3 in Fig. 4.1. Species number 3 has some kind of biological function for species number 2, which, in turn, has some biological function for species number 1. This later species is grazed by cows, cows producing milk for consumption. The fact that humans consume the milk indicates that there are preferences for milk. Human preferences are, in this case, our value premiss and hence the milk has an end value. The cow has, then, an instrumental value and instrumental values can be derived back to, in turn, species 1, 2, 3 and 4. At the same time, there may be, as in this example, someone with preferences for the pure existence of species number 3, i.e. it has an existence-motivated end value. We can conclude that there are biological objects of value in the landscape.

There are also other objects of value in the landscape. There is a cultural-historical object of value, where the valuation can be user- and/or existence-motivated. Another object has a value due to an aesthetic-motivated valuation.

Can it be claimed that the agricultural ecosystem has a value? If we assume that there are primary functions in the ecosystem in the agricultural landscape and that these functions are essential for the survival of the species (the biological objects of value), there is value in the ecosystem itself, an instrumental value. We can also talk about biological functions of value. As illustrated in the top left corner, there might be instrumental values assigned to other ecosystems as well, motivated by their functions for the agricultural ecosystem.

The landscape as a totality can offer recreation possibilities. Hence the agricultural landscape can have a user-motivated value.

It has been shown that welfare economics offers a possibility for defining the total value of an agricultural landscape. Moreover, it is possible to interpret other value-related terms so that they have a meaning in that perspective. However, from this it cannot be concluded that the welfare-economic perspective of values should be preferred to any other perspective. Such a conclusion has to be based on meta-ethical principles, making it possible to rank, for example, perspectives of values. Such a ranking can probably never be done and the problem can be handled by a careful use of value-related terms together with conditional conclusions. It is the responsibility of the economist to be aware of and discuss the approach used, including the ethical basis for the analysis. This might be sufficient, for example, when advising politicians but the question of different perspectives of values becomes more crucial when it comes to economic methods, such as CVM, where respondents are supposed to answer questions from a specific perspective of values.

THE CONTINGENT VALUATION METHOD AND DIFFERENT PERSPECTIVES OF VALUES

The general welfare-economic context can be seen as one picture of reality. The CVM is one method of eliciting values through the measure of willingness to pay (WTP) or willingness to accept (WTA). There is an ongoing debate on the validity of CVM, where some of the problems referred to are embedding or the problem of scope, strategic bias, hypothetical bias, design bias, instrument bias, starting-point bias, warm-glow effect, non-response bias and protest bias (Jakobsson and Dragun, 1996). Sagoff (1994) has pointed out that CVM requires that the respondents must adopt the same idea of values that underlies the method. Otherwise, there is a risk that the answers will be directed towards a question other than that intended by the survey constructor and the interpretation of the results will be quite problematic (Sagoff, 1994). The main focus here is to discuss whether some of the problems of CVM can be explained by respondents having different views of values. This explanation does not exclude other explanations; different views of values might, for example, result in protest bids.

Above, it was concluded that welfare economics requires an anthropocentric value-subjective perspective. This perspective does not, however, automatically lead to the welfare-economic perspective. Sagoff (1988, 1994), for example, stresses that private preferences are not the relevant measurement of values and that 'an analyst who asks how much citizens would pay to satisfy opinions that they advocate through political association commits a category mistake' (Sagoff, 1988, p. 94). Even if the analyst does not agree with the distinction between private and public preferences, the respondents may very well do so and there is a substantial risk of protest bias.

If the welfare-economic perspective is still chosen, that is, humans are the only valuing subjects and values are measured through preferences, there are more questions that must be answered before the analyses can be carried out. The question of which measure of welfare change to use, WTA or WTP, has been discussed extensively in the literature. It has been shown by Hanemann (1994b) that there is no theoretical presumption that the measures will be close in value. The recommendation from the National Oceanic and Atmospheric Administration (NOAA) Panel to always use the WTP format is motivated by the panel's desire to obtain a 'conservative' result from the contingent valuation (CV) studies (Arrow *et al.*, 1993). It is, however, dangerous, as pointed out by Harrison (1993), to measure one thing (WTP) if the correct thing to measure is something else (WTA), unless you know, in advance, that the measures will give approximately the same answers. Thus, there are no theoretical arguments for using the WTP format in situations when the property rights are distributed in such a way, that the respondent has a right

to the amenity in question, making WTA the correct format (Jakobsson and Dragun, 1996).

Contingent Valuation Method Respondents' Views of Values

A study carried out by Vadnjal and O'Connor (1994) was 'designed to obtain information on how people actually interpret questions of paying'. In the study, respondents in the East Auckland suburb of St Heliers Bay, New Zealand, were asked to express their views on the 'value' of Rangitoto Island. The island is now undeveloped and the respondents were shown two pictures of the island: one of the island in its present state (View A) and another with extensive building on the island (View B). In addition to the hypothetical WTP question,⁷ respondents were asked which view of the island they preferred. As a follow-up question, the respondents were asked:

Do you think the money amount you finally agreed to pay is an accurate measure of the value to you of continuing protection of View A?

Those who did not think so were asked to explain why they did not think that their stated WTP was an accurate measure of the value. The conclusion from the answers was that 63% of the respondents stated verbal interpretations at odds with the interpretation of values in welfare economics and CVM. A further sequence of questions was asked to find out more about the respondents' views on 'environmental values' and Rangitoto Island. The authors conclude that, even if the majority of respondents state a WTP, it is quite probable that those figures will have no meaning in the context of CVM.

They responded in terms of a view of how things ought to be in society, not from the standpoint of a merely self-interested consumer. This was made clear in two main ways: the widely expressed view that one 'shouldn't have to pay', and the sentiment also widespread that payment signified a willingness to 'fight to keep it'.

Vadnjal and O'Connor (1994, pp. 377–378)

It was further concluded that people want to find something in their environment that is beyond choice and value. In the economic context, one would stress that there is nothing beyond choice: to place something beyond choice is also a choice. If we move away from the economic viewpoint, this might still be 'true' but it is not obvious from which value criteria these choices should be made: is it a question of weighing preferences, a question of what is right or wrong or another kind of question?

When people expressed views of how things ought to be in society, this could be interpreted as another view of property rights, which would make the WTA format more relevant. However, the respondents in the survey about Rangitoto Island were asked if something could compensate for the loss of the unexplored island and the answer was that nothing could compensate; it

would, as some expressed it, be a shame. This could, if one insists on the welfare-economic viewpoint, still be interpreted as a question of property rights. In cases concerning common goods it is possible that the respondents refuse to state their WTA as long as all the other owners (including future generations) have not agreed to selling the property. Then the question should be put, 'If everyone else agrees on the development shown in View B, what is the minimum amount of money you would be willing to accept to agree?' But, if the respondents still do not adopt the viewpoint of welfare economics, there will be a problem. Using the WTA format would solve some of the problems (and maybe raise new ones), but that solution would not be sufficient if, for example, some of the respondents believe that species other than humans are also relevant valuing subjects or that there are intrinsic values.

How does it occur, then, that respondents state a positive WTP even if they do not think that they should have to pay for 'something that's already yours'? According to Vadnjal and O'Connor (1994), the WTP can be interpreted as gestures in a political process. Many said that they would contribute money for a 'fighting fund to make sure nothing changes'. So the interpretation is that there is a WTP, not for Rangitoto Island but rather for one's right to participate in the political process, a right which most of us think should not be motivated by a WTP at all. One conclusion might be that respondents are answering more as citizens, making judgements of what is right and wrong, than as consumers. This is also the conclusion of Blamey *et al.* (1995), referring to a study of forest management in Australia undertaken by the Resource Assessment Commission (RAC).

Different Views Explained as Lexicographic Preferences

The problem of how respondents perceive the CVM questions is also investigated by Spash and Hanley (1995). In a survey, they have investigated the WTP to prevent a hypothetical reduction in biodiversity. Using the results, they investigate the nature of preferences, coming to the conclusion that CVM fails in measuring welfare changes due to the prevalence of lexicographic preferences.

Lexicographic preferences describe a case where the individual refuses to make any trade-offs to compensate for the loss of a particular commodity. Using the welfare-economic measures, WTP would be equal to the entire budget and WTA would be infinite.

In Fig. 4.2 the prevalence of lexicographic preferences for W (for example, wildlife) is illustrated. Assuming two goods providing utility and W having a priority over the other good, the 'indifference curves' are reduced to 'indifference points'. Starting at point A there is no increase in X that is enough to compensate for a loss in W. Since W has priority over X, all points in the shaded area (including the line segment AB) are preferred to A. That is,

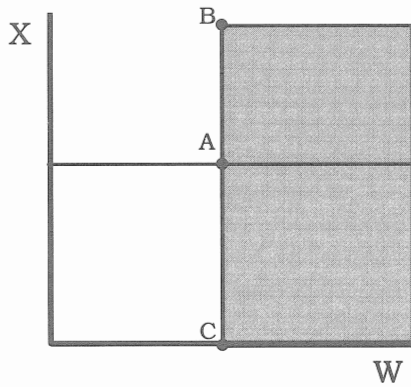


Fig. 4.2. Lexicographic preferences (from Spash and Hanley, 1995).

there is no point producing the same utility level as A, or no indifference curve exists.

The implication of lexicographic preferences is that one good (X) will have no priority at all, illustrated as point C being preferred to all points to the left of the line BC. In the example used by Spash and Hanley (1995), this means that all other consumption will be sacrificed to keep the wildlife at the level of the line BAC. This results in the existence of lexicographic preferences being regarded as unrealistic.⁸ Spash and Hanley conclude, before going on with some empirical evidence, that, if there are lexicographic preferences involved, the Kaldor–Hicks potential compensation test will become inoperable. This seems to be a rather strange conclusion: why is a test inoperable because it sometimes gives the answer ‘no, this project should not be carried out’? In the theoretical example (illustrated in Fig. 4.2) used by Spash and Hanley (1995), they suggest that the motivation for not accepting any compensation might be that an individual believes that ‘aspects of the environment, such as wildlife, have an absolute right to be protected’. Without saying anything about the possible existence of lexicographic preferences, this seems to be an example where it simply is not about preferences at all! It is rather about the role of humans and the argument can be interpreted as supporting the standpoint either that humans have to interpret other species’ valuations or that they are intrinsic. If someone else has a right, why should I answer a question about my WTP for preserving the ‘property rights’ that already exist? What is the meaning of my WTA compensation for the selling of what belongs to someone else? The motives that Spash and Hanley (1995) refer to should not be interpreted as ‘lexicographic preferences’, not as preferences at all. If respondents report WTP or WTA in a CV study, this should be interpreted in the way proposed by Vadsjal and O’Connor (1994).

The Contingent Valuation Method as Surrogate Referendums

Blamey *et al.* (1995) discuss the possibility of using discrete choice (DC) methods (or referendum methods) to avoid some of the problems discussed above. They conclude that the result of such studies should not be interpreted as welfare measures but that 'referendum votes are more likely to represent statements about the socially optimal level of provision of particular public goods than they are to yield estimates of individual benefit' (Blamey *et al.*, 1995, pp. 268–269). They also present empirical results supporting the idea that the respondents act as citizens rather than as consumers when answering CVM surveys. Their conclusion is that CVM studies do not produce results appropriate for use in welfare-economic analyses, such as cost–benefit analyses (CBA). Their results, however, increase the appeal of the use of CVM studies as 'surrogate referendums'.

If humans are to interpret other species' valuations or intrinsic values, this is probably handled better in democratic discussions than through a CV study designed to elicit welfare-economic measures of value. Also the referendum format seems to be more attractive.

CONCLUSIONS

This chapter has discussed the concepts of value and it can be concluded that there are different views of values, where welfare economics represents one of these views. Other value-related terms, such as biological values, can be interpreted from different perspectives of value. Hence, those terms could be understood through and incorporated in a welfare-economic analysis only if they are interpreted from an anthropocentric value-subjective and preference-based perspective of values. The meaning of value-related terms would be clearer if authors indicated the adopted perspective of values. Biological values, for example, can be interpreted from different perspectives and this would be clarified if terms like biological functions of value, biological objects of value and intrinsic biological value were used. The meaning of economic value would be clearer if the term EMTV were used.

The term values can be differently understood, depending on the viewpoint. It is most probable that people have different world-views, including different interpretations of this term. Although it may be reasonable to accept the welfare-economics approach as one way of interpreting these terms, the divergence in the understanding of them is a problem for the CVM. If the respondent does not share the value-subjective and anthropocentric view of welfare economics, the interpretation of the WTP/WTA question might be quite different from that intended by the researcher. There is a risk, in the CBA context, that the stated WTP/WTA expresses views on, for example, the rights of species or ecosystems and not the preferences.

Lexicographic preferences are not the problem. If there are any lexicographic preferences, this is not to be regarded as a problem in the CBA context. The method should not be rejected by the argument that it sometimes gives the answer that a project should not be carried out. If there really are any lexicographic preferences, the distribution of property rights becomes crucial for the outcome of the CVM analysis, as well as for the CBA. But some of the problems underlying the use of the term lexicographic preferences are important to the use of CVM. The conclusion is, however, that these problems should be described as differences in views on values and how property rights should be distributed, and not as preferences at all.

The question of whether the species or ecosystems have any rights is particularly interesting when discussing the agricultural landscape. If there are any rights to a preserved landscape (held by the consumer and/or the species or ecosystem), there must be an obligation for someone (for example, the farmer) to act. This is quite different from the situation where the obligation is 'not to exploit', as in the case with Rangitoto Island. If it is an obligation for humanity to support the species dependent on a specific kind of agricultural landscape, it might be the case that the public should compensate the farmers for maintaining the responsibility of the human society. Whether there is any use for CVM if this view is adopted remains to be discussed. It could, however, be the case that the obligation follows, or should follow, with the ownership of the land. In a CVM study concerning the agricultural landscape, these questions have to be resolved.

So what should be learned by the survey designer? Either one must force the respondents to adopt the welfare-economic view and the proposed definition of property rights or one must be very careful with the interpretation of the stated WTP/WTA. In all cases, the usual WTP/WTA question should be complemented by questions about the respondents' views on values, ethical considerations and property rights. By discussing different views of the problem, it might be easier to find acceptance for using the welfare-economic perspective as one perspective among others. If the respondents are allowed to discuss and state their views on values before the WTP/WTA question is asked, it might be easier to 'hypothetically accept' the view and answer the question intended by the survey designer. However, it is also possible that a discussion of these questions will be confusing and that the interpretation of the answers will be even harder. As always, focus groups and prestudies are probably of great value.

NOTES

1 I would like to thank Thomas Hahn, Knut Per Hasund and Dan Vadnjal for helpful comments. The author is, however, solely responsible for all errors and omissions.

2 For a discussion of practical problems in CVM, see Kriström (1995).

3 O'Neill (1992) distinguishes three interpretations of the term intrinsic value: (i) end value; (ii) value as an intrinsic property; and (iii) objective value. Here the term is used in the third interpretation.

4 This is the case in Ariansen (1993).

5 These terms are used here instead of the environmental-economic terms, well known in the literature, user value and existence value, introduced by Krutilla (1967).

6 The other two are subsistence value and utilitarian ecological value.

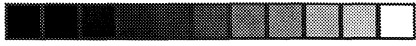
7 There were actually two questionnaires used, QI and QII. The scenario of QI was that approval for the building existed and the respondents were asked to state their maximum WTP into a private trust fund to avoid that development. In QII, it was assumed that the island was protected and the respondents were asked to state their WTP for continuing protection.

8 Malinvaud (1972, p. 20), referred to in Spash and Hanley (1995).

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[†] This is an abbreviation of the originally published reference list. Only the references referred to in the reprinted chapter have been included.



II



Perceptions of Rights and Environmental Valuation

Incompatible Opinions About Rights as Explanation to Anomalies in SP-surveys

Fredrik Holstein^{*}

The occurrence of anomalies, value-expressions that do not fit into economic theory, has give rise to different explanations: the occurrence of lexicographic preferences, protests, preference reversals and respondents opposing the economic interpretation of willingness to pay (WTP) or willingness to accept (WTA) answers. In this paper it is suggested that such value-expressions can be interpreted as opinions about how initial rights should be interpreted. It is suggested that incompatibility between such opinions and the rights implied by a questionnaire may explain anomalies of the kind mentioned above. The model suggested here predicts that the relation between rights implied by the questionnaire and rights asserted by the respondent can be crucial for the result of stated preference surveys and that a majority of all possible combinations of implied and asserted rights entail rational motives for respondents not to express WTP/WTA as expected in economic theory.

1. Introduction

The extensive use of contingent valuation method (CVM) and other stated preference (SP) methods for e.g. environmental valuation has illustrated incompleteness of the economic understanding of people's value-expressions (Vatn, 2004). The way people react and answers to SP-surveys cannot always be explained as arising from preferences of the kind normally assumed in economic theory. "Inexplicable" reactions and answers have given rise to different exceptions from standard assumptions such as the occurrence of lexicographic preferences, modified lexicographic preferences (MLP), protests, preference reversals and respondents opposing the economic interpretation of their willingness to pay (WTP) and/or willingness to accept (WTA) answers. Disregarding such answers entails incompleteness when valuing e.g. environmental changes whereas including them raises interpretational problems and may cause incompatibility between unrelated values. The main aim of this paper is to suggest a framework for interpretation of people's value expressions and to analyse if this framework can explain some of the "anomalies".

The central assumption in this paper is that people's value-expressions can be interpreted as belonging to one of two categories. Either they can be interpreted as preferences of the kind normally assumed in economic theory. Or, they can be

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interpreted as opinions about how initial rights should be distributed. The later should, with this distinction, be interpreted as non-preferential value-expressions. If opinions about how rights should be distributed are contrary to the rights implied by e.g. a WTP-question in SP-surveys it is assumed that people have good reasons for not expressing preferences for the suggested trade-off but instead express their divergent opinion about how the initial rights should be distributed. Hence, protests and other “anomalies” may be understood as an outcome of the incompatibility between (by the respondent) asserted rights and (by the WTP- or WTA-question) implied rights. Ten possible combinations of asserted and implied rights are identified. Only in two cases there is an obvious concordance whereas in all other cases there is a potential incompatibility that may explain the occurrence of anomalies in e.g. SP-surveys.

As noted by Curtis (2001), even if the understanding of respondents’ motives (behind e.g. “anomaly-answers”) has improved it is hard, or impossible, to fully understand the individuals’ motives. However, to put it a bit far-fetched, the aim here is not to, in a psychological sense, understand the motives of the individuals. Instead, the purpose of the paper is limited to suggest a framework from which different motives can be interpreted.

The paper is organized as follows. In section 2 the occurrence of what, perhaps a bit superficial, is called “anomalies”¹ and previous explanations to these are reviewed. Then, in section 3, an alternative explanation is suggested and used to predict reasonable reactions to SP-questions. Thereafter, in section 4, some previous results are reinterpreted in the light of the suggested perspective of people’s value-expressions. Finally, the paper is summarised and further questions are raised in section 5.

2. “Anomalies” - occurrence and previous explanations

From an economic perspective empirical results, such as answers (or non-answers) to SP-surveys, can be regarded as “anomalies” if they cannot be explained from standard economic assumptions of the characteristics of “normal preferences”²

¹ The reactions and answers are anomalies if regarded from a perspective where people are assumed to be utility maximizers with “normal” preferences. From other perspectives such reactions or answers may be anything but anomalies.

² In economics it is usually assumed that preferences, in order to be able to order all possible consumption set, fulfil the assumptions of completeness (all consumption bundles can be compared), reflexivity (every consumption bundle is at least as good as itself), transitivity (if x is preferred to y and y is preferred to z then x is preferred to z) and non-satiation (guarantees that the indifference set is never “wider” than a single point). In order to guarantee solutions to optimization problems it is normally also assumed that preferences are continuous (implying that a decrease in the consumption of one good always can be compensated by an increase of another good making the consumer indifferent) and, to ensure a global optimum, strictly convex (Varian, 1992; Gravelle & Rees, 1992). It is sometimes also stressed that preferences are also assumed to be stable, see e.g. Vatn (2004). I will not regard the

(Sugden, 2005). An empirical result can also be thought of as an anomaly if additional, and implausible, assumptions are needed to explain the result (Kahneman et al., 1991). An anomaly has a causal explanation but the explanation is excluded or misinterpreted by that theory, to which the result appear as an anomaly (Sugden, 2005). Among the anomalies observed in relation to SP-studies are the WTP/WTA-disparity, the scale intensity, hypothetical bias, preference reversals, the influence of irrelevant cues and the endowment effect (Sugden, 2005; Hanley & Shogren, 2005; Braga & Starmer, 2005).

This paper will focus on some of these anomalies, namely that people that are assumed to be rational equipped with “normal preferences”, instead of reporting their WTP or WTA quite frequently

1. protest instead of reporting their true WTP/WTA,
2. refuse to make trade-offs,
3. report inconsistent rankings or
4. oppose an economic interpretation of their WTP/WTA answers.

The examples reviewed in section 2.1 below, shows that these kinds of reactions are not unusual in SP-surveys. As reviewed in section 2.2, these anomalies have given rise to a number of different and divergent explanations that call for a more general explanation. In section 3 it will be assumed that people may hold non-preferential opinions about how rights should be distributed and it will be shown that this can complement the previous explanations to the anomalies.

2.1 “Anomalies” - previous occurrence

First, it is a common problem in SP-surveys that respondents refuse to answer either the whole questionnaire or the WTP/WTA-question . It is also common that people refuse to state any WTP/WTA for reasons other than that they really prefer the scenario that includes payment or compensation (Jorgensen *et al.*, 1999; Strazzera, 2003). Even though a refuse to pay may be a correct reflection of people being indifferent (Kriström, 1997; Strazzera, 2003) it may also be, which is problematic, that they do not correctly reflect the “true economic value” (Jorgensen *et al.*, 1999). The general recommendation is to try to minimize the number of protests and to delete the identified protests from the data (Freeman, III, 2003, pp 165-166) and the debate have focused on which answers that should be censored (Jorgensen *et al.*, 1999) and how this may lead to a sample selection bias (Strazzera, 2003).

Second, people may refuse to make trade-offs even if they express values for e.g. an environmental good. Respondents expressing values but refusing to pay

later as a necessary assumption for “normal preferences” but instead assume that preferences are instantaneous and may change over time. How fast and how much the preferences do change is of course an important question but the theory do not require such an assumption. The usefulness of empirical results, e.g. from SP surveys, is however heavily dependent on the stability of preferences. It can be noted that most markets are continuously updated to changes in preferences whereas policies based on SP-estimates do normally not have any link to changes in preferences.

has been reported by e.g. Stevens *et al.* (1991), Spash and Hanley (1995), Lockwood (1998) and Spash (2000).

Third, there are cases where people report inconsistent rankings. It has been found that the ranking of alternatives tend to alter if, on the one hand, WTP or, on the other hand, some other attitude measure is used (Brown, 1984; Gregory *et al.*, 1993; Johansson-Stenman, 2002).

A fourth kind of “anomaly” is when people oppose an economic interpretation of their own WTP/WTA answers. The possibility to interpret respondents’ answers as expressions of “normal preferences” has been questioned by e.g. Vadhjal and O’Connor (1994), Satterfield (2001), Svedsäter (2003), and Vatn (2004).

2.2 Anomalies - previous explanations

The four kinds of “anomalies” above have all been explained as different kind of exceptions from standard economic theory. Some attempts have been made to and explain why people do protest in SP-surveys. Jorgensen and Syme (2000) suggest several reasons for people not to accept to pay; strategic reasons, financial constraints, lack of information and negative attitudes toward paying. The negative attitudes are divided into six kind of protests where the respondent stresses that: i) it is unfair that she should pay, ii) existing tax-revenue should be used, iii) less governmental money should be wasted, iv) she should not pay for what is already her right, v) money would be wasted if collected and vi) she already pays enough. Number ii) was the most frequent in the empirical study reported s.

In a survey by Söderqvist (1998) respondents were asked to motivate the reasons for their answers to the WTP-question. Among those who not accepted to pay for the project 17 % considered that “the (most) guilty ones should pay” and 10 % stated that the project should be financed by taxes they already had paid. In a study by Stevens *et al.* (1991) it was found that 25 % refused to pay for “ethical reasons”. In a study by Jorgensen *et al.* (1999) the respondents were, using an open-ended question, asked to motivate their refuse to state, or uncertainty about, their WTP. The most frequent motivations were “*I pay enough already*”, “*I can’t afford to pay at the moment*” and “*should use existing money*”. Jorgensen and Syme (2000) conclude that attitudes toward paying were common and related to WTP and that protests can occur since people mean that they “*are entitled to the public good*” or that “*some other party is responsible for paying*”. Also Diamond and Hausman (1994) conclude that people may state a “protest zero” if they feel that someone else is responsible. Others have concluded that protests are more frequent when analysing goods that have been provided for free and that frequent visitors more often protest against having to pay (Strazzera, 2003).

Others has suggested that people protest since they believe that they should have been asked to answer the questions about environmental projects in a role as citizens rather than as consumers (Blamey *et al.*, 1995; Hanley & Milne, 1996; Sagoff, 1988), that environmental goods cannot be treated as commodities (Vatn,

2000), or that nature or environmental amenities, per se, cannot be valued in monetary terms (Clark *et al.*, 2000).

The explanations above entail, more or less, new unique assumptions for each exception. In contrast to such “ad hoc” explanations, some attempts have been made to incorporate the explanations to refusals to make trade-offs, the second “anomaly”, into a more coherent theoretical framework. If preferences are interpreted as expressions for the preparedness to accept trade-offs between different amenities, people refusing to make trade-offs may therefore protest against SP-scenarios constructed to measure such preferences. This refusal has been explained by the occurrence of non-compensatory preferences (e.g. Lockwood, 1996a), lexicographic preferences (Spash & Hanley, 1995; Spash, 2000; Vatn, 2004) or modified lexicographic preferences (MLP) (Spash, 2000).

Lockwood (1996a; 1996b; 1998) has suggested that even if people can make a choice between alternatives this does not mean that they hold the kind of preferences normally assumed in economic theory. Due to non-compensatory strong comparability a person can make a choice and say which alternative that is better than the other. From such “N-preferences” a value ranking can be made but no trade-offs are accepted³. N-preferences cannot be measured by CVM but they may be common, especially for reduction in environmental quality. The presence of such preferences may therefore explain results where people refuse to answer or where the results seem to contradict the normal assumptions about preferences.

Lexicographic preferences describe the case where the individual refuses to make any trade-offs to compensate a loss of a particular commodity. Using the welfare economic measures, WTP would be equal to the entire budget and WTA would be infinite. Figure 1 illustrates the preferences of a person with lexicographic preferences for W (e.g. wildlife). Assuming \$ representing all other goods providing utility and W having priority over all these other goods there are just “indifference points”, e.g. A, B and C, and no indifference curves. Starting in point A, there is no increase in \$ enough to compensate a loss in W. Since W has priority over \$, all points in the shaded area (including the line segment AB, but excluding segment AC) are preferred to A. I.e., there is no point producing the same utility level as A and no traditional indifference curve exists. The implications of lexicographic preferences is that one good (\$) will have no priority at all which means that point C is preferred to all points to the left of the line BC. In the example by Spash and Hanley this means that all other consumption will be sacrificed to keep the wildlife at the level of the line BAC⁴.

³ It is normally assumed that people, due to compensatory strong comparability, can make a choice, produce a general value ranking and accept trade-offs. These “normal preferences” are labelled “E-preferences” by Lockwood (1996a; 1996b; 1998).

⁴ Lexicographic preferences are non-continuous, i.e. the indifference set consists of only one point but they do fulfil the assumptions of completeness, reflexivity, transitivity and non-satiation (Gravelle & Rees, 1992).

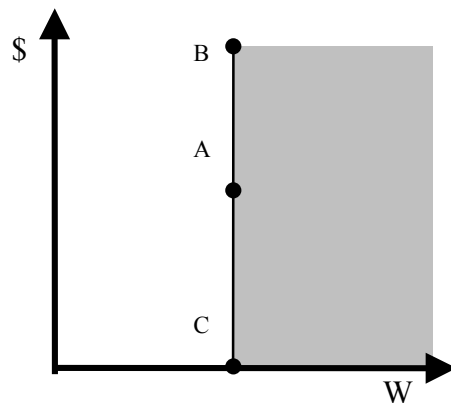


Figure 1. Lexicographic preferences, after Spash and Hanley (1995).

In an empirical study by Spash and Hanley (1995) the respondents who stated that “animals/ecosystems/plants should be protected irrespective of the costs”⁵ and, at the same time, refused to give a WTP amount were classified as having lexicographic preferences. The result indicated that 23 % of the general public had lexicographic preferences. Hanley and Milne (1996) discuss the ethical beliefs of respondents and conclude that lexicographic or rights-based ethical beliefs are common (99 % of the sample advocated that wildlife and landscape have rights, a number that decreased to 19 % if the maintenance of those rights meant a 25 % loss in income). They also stress that such rights-based beliefs are distinguished from the utilitarian based preferences that is necessary for adoption of the Kaldor/Hicks criterion in CBA⁶.

The existence of lexicographic preferences has been regarded as unrealistic (Malinvaud, 1972, p. 20, referred in; Spash & Hanley, 1995) and instead the concept of modified lexicographic preferences (MLP), where the superiority of one amenity is restricted, has been suggested (Spash, 2000). Assuming MLP the WTP does not have to be the total budget but may be restricted so that e.g. a minimum standard of living is maintained. Spash distinguish between strong and weak MLP where the former persist in defending animal rights and the later give up the defence when personal living standard would be reduced to a minimum. In the study by Spash (2000), those maintaining a rights-based view on animal rights, 37 % of the population, were classified as having MLP.

The third kind of “anomaly” is the occurrence of preference reversals. People who, in a choice situation, chose an environmental improvement turned out to have a higher WTP for a private good (Brown, 1984; Gregory *et al.*, 1993; Johansson-Stenman, 2002). A preference reversal occurs when there is an inconsistency between choice and ranking of buying or selling prices (Shogren, 2002). One example of this is when most people in a choice situation chose

⁵ Three sub-samples were asked about animals, ecosystems and plants respectively.

⁶ The conclusion that the K/H-principle cannot be applied if individuals refuse to accept any compensation (i.e. WTA is infinite) is invalid. Instead, the conclusion should be that the criterion could be used but that no projects will pass the test as long as anyone refuses to accept any compensation.

improved air quality ahead of improved computer equipment most people did have a higher WTP for the computer improvement (Gregory *et al.*, 1993, referred in; Johansson-Stenman, 2002).

The fourth kind of “anomaly” is that people oppose the economic interpretation of their own WTP/WTA-answers. In a study by Vадnjal and O'Connor (1994) respondents were asked about if they believed that their WTP did measure the value of the view investigated. Those who did not think so were asked to explain why they did not think that their stated WTP was an accurate measure of the value. The conclusion from the answers was that 63% of the respondents stated verbal interpretations at odds with the interpretation of values in welfare economics and CVM. Vадnjal and O'Connor conclude that the respondents “... responded in terms of a view how things ought to be in society, not from the standpoint of a merely self-interested consumer. This was made clear in two main ways: the widely expressed view that one 'shouldn't have to pay', and the sentiment also widespread that payment signified a willingness to 'fight to keep it'” (Vадnjal & O'Connor, 1994, pp 377-78). The respondents were also asked if something could compensate the loss suggested and the answer was that nothing could compensate. Similar results is reported by (Clark *et al.*, 2000) where an interview with qualitative follow-up questions indicated that most respondents did not perceive their own WTP-answers as legitimate reflections of environmental values. Moreover, it was consensus about that monetary value was not a proper measure for the right of nature. Hence, it is questionable if WTP/WTA-expressions always can be interpreted as values for e.g. environmental amenities.

3. Incompatibility between asserted and implied rights

This section offers a common explanation to the different “anomalies” by assuming that people may have opinions about initial distribution of rights and that these opinions belongs to another category of value expressions than preferences. So far, a number of different and disparate explanations have been suggested to explain the variety of anomalies, i.e. “strange” reactions and answers to SP-surveys. First, people seem to protest or refuse to answer because they do not like the scenario. Even though this explanation, in one sense, is correct it suffers from the lack of connection to the theory of preferences. Second, anomalies are explained by the presence of non-compensatory preferences (e.g. lexicographic or MLP) or preference reversals. The later constitute exceptions from the assumptions about “normal preferences” but it is unclear why, and for what amenities, people hold non-compensatory preferences. Other explanations to “anomalies”, such as “ethical reasons”, that choices are made in the role as citizens or that environmental amenities (per se) cannot be valued in monetary terms remain both vague and unrelated to economic theory. In this section a framework for

classifying value expressions into two categories is suggested. This framework offers a common understanding of the “anomalies”.

The “anomalies” above *appears* as anomalies from the economic perspective, i.e. when interpreted from the assumption that all values are expressed as “normal preferences”. They are not, however, “anomalies” *per se*. From other assumptions there might be logical and consistent explanations. However, suggesting new unique assumptions, i.e. ad hoc assumptions, for each exception mean that economic theory will lose in simplicity and generality. The suggested framework, that possibly will offer a common understanding of the “anomalies” starts from a general assumption⁷:

Assumption 1. People may have opinions about how initial rights should be distributed.

The hypothesis underlying this assumption is that many “anomalies” will come out as reasonable and rational value-expressions if interpreted as such opinions instead of as expressions of preferences. A direct justification of assumption 1 is people’s explicit expressions about who should, and shouldn’t, pay. As the review above shows, people do express opinions as “*I should not pay*” or that “*it is someone else’s responsibility*”. Such opinions are hard to interpret as ordinary preferences but are easily understood as opinions about how initial rights should be distributed.

In the following, two complementary assumptions are suggested and it will be shown that the three assumptions, jointly, offer a general explanation to the different anomalies. The introduction of new assumptions raises, however, another important question. Do they affect the interpretation of results from other economic analyses than SP-surveys, such as the analyses of market behaviour? A brief discussion on that subject is introduced in sub-section 3.2.

3.1 A general explanation to different anomalies

To use assumption 1 to explain anomalies in SP-surveys we must explain two things. First, why do people choose to express these opinions and not preferences? Second, why cannot such opinions be interpreted and analysed as (normal) preferences, i.e. what is the difference between the two kinds of value expressions?

To answer the first question, recall that in economics it is normally assumed that preferences are expressed by actual choices (revealed preferences) or expressed by answers to SP-questions (stated preferences). In both cases people are confronted with some kind of choice, real or hypothetical, which more or less forces them to choose. By the assumption that people are rational it can be concluded that real choices do reflect preferences. I.e. we make the interpretation that choices are

⁷ This assumption is made in addition to the assumptions about consumers normally made in micro-economics (see footnote 2, page 2).

guided by what we call preferences. To make a choice the alternatives must be reasonable clear regarding the distribution of property rights, i.e. if you have to pay to get what you want or if you can have what you want for free and even can require compensation to give it up. This leads us to a second, supporting, assumption that will be used in the analysis⁸:

Assumption 2. Acceptance of property rights is a necessary precondition for preference formation.

The general idea that people have complete preferences has been questioned by e.g. Diamond and Hausman (1994), Gregory and Slovic (1997), Schkade and Payne (1994) and Vatn (2004). If preferences are not complete it must be that, if we at all believe that preferences exist, some preconditions have to be fulfilled before they are formed. Vatn (2004) has, for example, suggested that the creation of preferences requires a social process, i.e. that individuals have to discuss with others before they can form their preferences⁹. I will not go deeper into the discussion about which the other preconditions may be but merely assume that the acceptance of rights is one, possibly among others, precondition. Assumption 2 implies that WTP or WTA only can be expressed if the property rights, as they are perceived and understood by the individual, are accepted. Then, what is required to accept property rights? A third assumption suggests under what circumstances property rights can be accepted.

Assumption 3. Property rights may be accepted only if they i) cannot be affected or ii) in case they can be affected if they are regarded as morally legitimate.

Hence, in a situation where property rights cannot be affected they may be accepted even if they are perceived at morally illegitimate. However, in a situation where they can be affected, as perceived by the individual, moral legitimacy is a necessary precondition for acceptance of rights.

For amenities valued through SP-surveys the property rights are often more or less unclear. The fact that an amenity is not owned in a way that allow for market-like transactions is, in fact, often the very reason for that a SP-valuation is done. As it often is non-rival and non-exclusive amenities being valued people are possibly used to having the opportunity to consume e.g. environmental goods for free. Hence, it should not be surprising if people believe that they have a right to consume the amenity for free also in the future (Strazzera, 2003). This should be compared to the usual practice, as recommended by the NOAA-panel (Arrow *et al.*, 1993), to use the WTP-format. Since the WTP-format does imply that the respondent does not have the right these implied rights may not be accepted since

⁸ This assumption is in conflict with the assumption of complete preferences (see footnote 2, page 2). We may, to make the two assumptions consistent, think of it as if preferences are potentially complete. I.e. if the preconditions are fulfilled people have the ability to create complete preferences.

⁹ The respect for co-owners can be interpreted as an opinion about initial rights. However, the need for social interaction can be interpreted as another precondition for preference formation.

they are regarded as illegitimate. Moreover, answering a SP-survey may be interpreted as a situation where property rights can be affected. Hence, when it comes to environmental valuation it is not uncommon that none of the reasons for accepting rights are fulfilled. Since answering a SP-survey is an opportunity to express opinions about rights at the same time as the legal property rights often are unclear means that we should not be surprised if at least some respondents try to express their opinions about the initial distribution.

People might be prepared to express preferences even if rights are unclear. This can be interpreted as if these persons are prepared to accept the right structure implied in a SP-study and therefore also form and express their preferences. Either they do find the implied rights morally legitimate or they accept that a SP-survey is not the arena for non-preference value-expressions and choose to answer a WTP (or WTA) question conditionally to the implied structure of rights. Nevertheless, the aim of this paper is to explain why some respondents protest or give “” answers that seems to be anomalies to SP-surveys.

To sum up: SP-surveys may constitute an opportunity to express opinions about initial distribution of rights and, since people in many cases also may have moral doubts about the implied rights, such opinions may be expressed instead of the (possibly non-formed) preferences. Then, to turn to the second question formulated in this sub-section, why can such value expressions not be *interpreted* as preferences?

The rationale for why opinions about how rights should be distributed cannot be interpreted as preferences is found in normative economics. There is a link between the value premise in normative economics and the interpretation of peoples' value expressions. If all that counts in a normative analysis is preferences it is reasonable to interpret as much as possible of people's value-expressions as preferences. Moreover, what cannot be interpreted as preferences is disregarded. However, deliberation between preferences, or rather between WTP and WTA, is *not* the only normative question in economics. There are two kind of normative adjustments related to the economic analysis: the question of initial distribution of rights and the question of efficient redistribution of rights.

The central normative question in the welfare economic analysis is the question of efficiency, i.e. if any potential Pareto improvements can be done. This redistribution of amenities (or rights) has to be done from a reference point, an initial distribution. I.e. the measure of the intensity of preferences¹⁰ is the second step in an analysis of how resources should be used. There are an infinite number of Pareto efficient solutions, each corresponding to different initial distributions of rights and different sets of institutions and preferences (Randall, 1987). The question of a desired use and distribution of resources hence falls apart into two questions where the second is about efficiency in the welfare economic sense (secondary redistribution) and the first is about how the initial distribution should

¹⁰ Or, it is rather the strength in the WTP- and the WTA-measures respectively that is the measures of values.

be defined (Samuels, 1992)¹¹. On a working market the first question, of initial distribution, is already set: it is the present distribution that counts. This does not mean that the very concept of Pareto-optimality has anything to do with the status quo distribution. However, as soon as the concept is to be operationalized, some initial distribution has to be assumed. This is true not only for analysis of markets, but also for analyses of policies using cost benefit analysis and SP-survey results. Since all prices on the market depend on the set of rights, the results of a CBA, and every elicitation of WTP or WTA, will be dependent on the existing structure of rights (Schmid, 1995).

Hence, the question of initial rights is treated as a positive assumption in the economic analysis. But the question of how initial rights *should* be distributed (or if and how any primary redistribution of rights should be made) is a normative question. This normative question is distinguished from the normative economic analysis. There is, however, a clear and important relation between the two normative questions; what is economic efficient depends on the initial distribution. Therefore, the two normative questions are hierarchal related in the sense that the question of initial distribution has to be solved before the question of efficiency¹². As well the possibility to make an economic analysis as the outcome of the analysis depend on the answer to the superior question of initial rights.

How, then, is this discussion about the normative foundation of welfare economics related to the question of which value-expressions that cannot be interpreted as preferences? Since there are two kinds of normative deliberations related to an economic analysis the interpretation of observations should be allowed to be classified as belonging to any of these categories. Hence, the normative economic analysis, as well as the normative economic theory, depends on the answer to a normative question that cannot be made internal to the analysis. Therefore, neither people's opinions on that normative question can be interpreted as preferences. Hence, they cannot be used as inputs to an analysis of efficiency.

3.2 Other implications of the assumptions

Before continuing the analysis about how the assumptions affect the interpretation of people's reactions to SP-surveys it will, in this sub-section, be stressed that the suggested assumptions normally will leave the analyses and interpretations of markets unaffected. The reasoning behind that conclusion goes as follows. In a

¹¹ Rights may also be changed, and not just initially distributed; a primary redistribution through the political process (Samuels, 1992).

¹² The analysis of efficiency requires, at least, an assumption about the distribution of initial rights. The normative question of how rights should be distributed can, on the other hand, be discussed and determined without any influence from the question of efficiency. In that sense, the question of distribution is superior to the question of efficiency. This does not mean that every objection against the distribution of rights has priority over all preferences. Usually, opinions about the definition, or re-definition, of rights should be expressed and discussed in the (democratic) political process whereas preferences will guide the choices made at the markets defined by those rights. I.e. at the market, where rights are distributed, value expressions about the initial distribution are not superior but rather outplayed. Such value expressions should be put forward in the proper forum that usually is the political process.

market situation people usually have to accept the property rights whether you like the distribution or not. In market situations the property rights structure is often quite clear; the consumer knows that she/he has to pay for most goods and the resource owner knows that she/he can get paid for selling e.g. her/his labour. People may of course have opinions about the property rights underlying a certain market transaction but for market goods an acceptance may have established just by prescription¹³. But, even if the underlying rights are not regarded as morally legitimate a market situation does not constitute a natural arena for expressions of values about how rights should be distributed¹⁴, they cannot normally be affected that way. Hence, even if the assumptions we have made are general they seem to affect the analysis of SP-answers but, principally, leave the analyses of markets unaffected. In real experiments with private goods the situation is close to an ordinary market situation. That means that anomalies, according to the framework suggested here, should be less common. This is also the general findings in experiments (Braga & Starmer, 2005).

3.3 Possible right structures – classification and interpretation

A right implies the possibility to derive utility from the use (or passive use) of an amenity and the possibility to refuse to give up this possibility without sufficient¹⁵ compensation¹⁶. In a SP-survey there is usually a scenario where the respondent is asked either to pay for an improvement (or to avoid a deterioration) or to accept compensation to forgo an improvement (or to tolerate a deterioration)¹⁷. A scenario hence implies a (hypothetical) buyer and seller where the seller has the right to the amenity. At the same time, as discussed above, the respondent may have ideas about who is the (legitimate) owner and/or who should be the (legitimate and/or morally defensible) owner. If the right implied by the scenario, the “implied right”, and the right the respondent support, the “asserted right”, do not correspond we have a situation with irreconcilable views that may make it more reasonable for a respondent to express her/his opinions about how the right should be distributed than to answer the intended WTP- or WTA-question¹⁸.

In principle, respondents may assert five different perspectives of how rights are, or should be, distributed in relation to herself, to the other party and to “third

¹³ Such acceptance is at least often more likely in a market situation than for the situation with a relatively newly observed scarcity of an environmental good.

¹⁴ There are of course people protesting by e.g. boycotting certain products but the arena for primary redistribution of rights is normally the political process (i.e. because of free-riding incentives).

¹⁵ It is also the privilege of the owner to decide what is a sufficient compensation. The problem of measuring WTA because of e.g. strategic bias is not a question to be discussed in this paper.

¹⁶ See for example (Schmid, 1995; Bromley, 1995; Bromley, 1997; Hahn et al., 1998) for a more complete discussion of the meaning of “rights”.

¹⁷ Which is the correct measure is normally assumed to depend on legal rights but it has also been argued that it is the reference state, as people regard it, that should guide the choice of measure (Knetsch, 2005). The question here is not about which measure that is correct but about how irreconcilable views may affect reactions to surveys.

¹⁸ The situation where respondents state that they “don’t think that they should have to pay” has of course been noticed in the literature. The contribution by this paper is to offer an explanation from a coherent view on values and value-expressions.

persons”. The “other party” is the one implied to be the seller in the WTP-case and the buyer in the WTA-case. Right may be either private or collective. In the following, the distribution of rights the respondent believes should be in force is called the asserted rights. The classification below should be seen as a framework for *interpretation* of different value-expressions. Just as most of people’s value-expressions are interpreted as preferences the classification below suggests that some value-expressions can be interpreted as opinions about distribution of initial rights. Hence, people advocating a non –anthropocentric position, i.e. a position that in a sense is incompatible with the anthropocentric perspective of normative economics, can be *interpreted* in terms of expressing an opinion about rights, which is compatible with the economic perspective. Such an interpretation makes, in principle, such opinions understandable from an economic perspective but it also makes it clear in what sense SP-surveys may be problematic for people with such opinions. Hence, respondents may assert five types of rights distribution:

- I) The individual may assert a private right of her own to the amenity¹⁹ in question. This may be in opposition to legal rights but the important thing for the possible creation and expression of preferences is what the respondent asserts.
- II) The individual may assert a collective right including her.
- III) The individual may assert a private right of the other party.
- IV) The individual may assert a collective right including the other party (excluding herself).
- V) The individual may assert a private or collective right of someone else than the other party or herself. The third party might be another individual or a collective living now, i.e. an owner that in principle can take part in a trade-off by insisting on a certain compensation to accept giving up the right. The asserted owner might also be a one impossible to communicate with, e.g. other species and/or future generations.

In SP-survey etc. it is, on the other hand implied that the respondent either is the owner (WTA-question) or not is the owner (WTP-question). Hence, there are ten possible combinations of asserted rights (table 1) and implied rights (owner – not owner). The relationship between the implied right and the asserted right might be either concordance or incompatibility. In the later case the respondent may find the implied rights (morally) illegitimate. If the situation is perceived as a situation where rights can be affected the respondent may have problems to form and/or to express preferences and may instead protest in some way²⁰.

¹⁹ The “amenity” may be e.g. improved or preserved environmental quality.

²⁰ However, even if this is true for some of the respondent many (perhaps even a majority) of the respondents initially disagreeing on the implied rights may i) accept it, ii) form new preferences related to the implied rights and iii) state a WTP or WTA that can be interpreted as an expression of preferences.

Table 1. Possible combinations of asserted and implied rights.

	Respondent asserts that she has the right		Respondent asserts that other party has the right		Respondent asserts that “third party” has private or collective right
	Privately	Collectively	Privately	Collectively	
WTP-quest.	I_{WTP}	II_{WTP}	III_{WTP}	IV_{WTP}	V_{WTP}
WTA-quest.	I_{WTA}	II_{WTA}	III_{WTA}	IV_{WTA}	IV_{WTA}

In the following sections possible outcomes of the ten possible combinations of implied and asserted rights are discussed. Instead of discussing incentives to over- or understate once true WTA or WTP respectively the discussion will take its starting point in the above assumptions. The question is if it in different situations is rational (or at least reasonable) to not express any preferences at all but instead e.g. refuse to answer or express something that should be interpreted as opinions about rights.

3.4 The WTP-question and different asserted rights

A WTP-question implies that the respondent do not have the right (either to a suggested improvement or to be spared from a suggested deterioration). Under which asserted rights is it reasonable to accept the implied right and hence, under the suggested assumptions, form and express preferences?

First, the respondent asserting a private or collective right of herself (i.e. type I_{WTP} or II_{WTP}) have good reasons not to accept the suggested scenario where she is asked to pay for what is already regarded as her right. Since the respondent asserts that she/he has the right our assumptions lead to the conclusion that since there is contradictory opinions about who should have the initial rights no preferences will be expressed (or even constructed). Answering the WTP-question may be thought of as accepting and legitimising the implied right. For the one who believes that her asserted rights still, even after possible information in the survey, are desirable it is not rational to answer, indirectly, that it shouldn't.

Second, if the respondent asserts that the implied seller has a private right (i.e. type III_{WTP}) the implication of the WTP-question is in concordance with the rights asserted by the respondent. However, if the amenity, as often is the case, is a non-rival and nonexclusive amenity the respondent is probably one in an implied group/collective of buyers. It may therefore be that the respondent would have liked to discuss with the other potential buyers before the preferences are created (as suggested by e.g. Clark *et al.*, 2000; Svedsäter, 2003; Vatn, 2004)²¹ or at least

²¹ This reported need for social interaction may, at least for some people, be another precondition for preference formation. In this paper we are, however, concentrated on the importance of clarified initial distribution.

before any WTP is stated. In most CVM-scenarios the rule of delivery is made explicit. Hence, the rights and the institutional settings are probably sufficiently well defined to not be an obstacle to create and express preferences. The WTP-question seems to be compatible with the assumed assertion of the respondent.

Finally, the respondent may assert that someone else than the seller has the right, privately or collectively (i.e. type IV_{WTP} or V_{WTP})²². The WTP-question implies that the respondent does not have the right, which is in concordance with the assertion of the respondent. However, if the scenario implies a payment to someone without (asserted) rights to the amenity it may be regarded as (morally) illegitimate anyway since it indicates that e.g. an exploiter has the right to deteriorate e.g. an environmental good or to get compensation not to do so. The respondent that does not hold any superior values for the protection of other's rights might be prepared to also accept the scenario where the implied seller has the power to deliver (independent of the rights of other owners). That respondent may form and express preferences as expected. In other cases the incompatibility between asserted and implied rights may hinder the formation and articulation of WTP as an expression of preferences.

To summarize the WTP- cases; it is only when the respondent asserts that the implied seller has and should have a private right that there is complete concordance between asserted and implied rights. Then, since rights are accepted, preferences can be formed and expressed; no anomaly will appear because of dissentient views on rights.

In the cases with incompatibility between asserted and implied rights the respondent will not accept the implied rights and no preferences will be expressed in terms of WTP. The respondent may, however, express opinions about how rights should be distributed. Such expression may, if interpreted as representations of preferences, appear as anomalies.

3.5 The WTA -question and different asserted rights

A WTA-question implies that the respondent do have the right (either to a suggested improvement or to be spared from a suggested deterioration). Under which asserted rights is it reasonable to accept the implied right and hence, under the suggested assumptions, form and express preferences?

First, if the respondent asserts a private right of her own (i.e. type I_{WTA}) this is in concordance with the implied right. Hence, the implied rights can be accepted and WTA can be expressed and interpreted as an expression of preferences²³.

²² This includes both the case where the suggested seller is a part of the collective owners and where she/he is not. The important property is that there is at least one owner that does not get compensation.

²³ It can be noticed that anomalies appears also in WTA-experiments with private goods where property rights is clear. Such anomalies cannot reasonable be explained by dissentient views on rights. The framework suggested here does not, however, totally exclude other reasons for anomalies.

Second, the respondent may assert a collective right including her (i.e. type II_{WTA}). This is probably a more common situation when SP-studies are conducted for non-rival and/or non-exclusive goods that can be used simultaneously by many users. If the scenario is clear and if it is clear that also other asserted owners rights are respected the implied and asserted rights are in concordance the respondent can accept the implied rights and express a WTA that, correctly, can be interpreted as representing her preferences. However, the case may be more complicated than the case with an asserted private right. The respondent is asked to sell something that she/he believes belongs to a collective where a legitimate transfer of rights requires that the collective of owners agree on selling²⁴. If the scenario does not respects all owners the respondent may not feel that the individuals that should be, really will be compensated. In that case the asserted and implied rights are incompatible which may encourage the respondent to express her opinion about how the initial rights should be distributed. A special case of this situation is when future generations and/or other species are among those asserted as having rights. Since these owners cannot give their explicit permissions to give up their rights the respondent is put in a situation where she may feel responsible for protecting these rights. If so, even the respondent that would be willing to give up her “part” of the amenity may refuse to state a WTA since that may be taken for a justification of the violation of others rights²⁵.

Third, the respondent may assert a private right of the implied buyer (i.e. case III_{WTA}). The WTA-question implies that the respondent has a right, which is contradictory to the asserted right and the respondent may not express any WTA. Due to the information in the survey, possibly even the WTA-question itself is enough, the respondent may of course change her opinion about how the right should be distributed. If the respondent believes that the SP-study is conducted by, or at the request of, the implied buyer it may be quite easy to accept that the asserted owner surrenders her/his right in favour of the respondent. If so, the initial incomparability between asserted and implied rights will vanish, and the respondent can express a WTA reflecting her preferences.

Fourth, the respondent may assert a collective right including the implied buyer (case IV_{WTA}). As in the third case, the WTA-question implies that the respondent has a right, which is contradictory to the asserted right. Again, the respondent may of course change her opinion. But, in this case the respondent may not, as easy as in case III_{WTA}, accept that the implied buyer also gives up the rights of the other asserted owners. Hence, this case may be equal to case II above where the respondent may hesitate to sell others rights.

²⁴ The decision rule for the collective may require e.g. majority or consensus. The important property is however that acceptance of others than the respondent is required.

²⁵ Respondents with such opinions about rights may, even if they believe that they should not have to pay, be more prepared to state a WTP than a WTA. If the respondent regards the question as a question about initial rights a WTP may be understood as a defence for someone's rights (as suggested by Vадnjal & O'Connor, 1994) whereas a WTA may be understood as a, perhaps morally illegitimate, selling of someone else's rights.

Finally, the respondent may assert that a third party has a private or collective right (case V_{WTA}). As before, the WTA-question implies that the respondent has a right, which is contradictory to the asserted right. This case has the same implications as discussed above for case II_{WTA} and IV_{WTA} ; respondents may refuse to sell someone else's rights. And, since the implied owner is not among the asserted owners, the respondent may not change her opinion as easy as in case III_{WTA} .

To summarize the WTA-cases; it is only in the case where the respondent asserts that she/he has and should have a private right that there is immediate concordance between asserted and implied rights. In the case where the respondent asserts that the implied buyer has the right it is probably easy to accept that the right is given up in favour of oneself. If implied rights are accepted preferences may be formed and a preference-reflecting WTA expressed. In the other cases it is a question of if the respondent is prepared to defend the rights of others when it so directly entails that the respondent forgo an offer. It seems quite reasonable that a respondent will hesitate to state a WTA when a "third party" is among the owners since this implies selling something that belongs to others. This problem becomes more obvious considering goods/commodities where it is assumed that also future generations have rights. If a respondent believes that future generations have the right to e.g. biodiversity, expressed for example as a right to the maintenance of the species living in an area today, it may be problematic for her/him to agree on selling her/his part of that right. The same kind of problem will occur with other asserted right-holders that are impossible to communicate with, such as other species.

4. Incompatible opinions about rights and anomalies: examples from the literature

The analysis in previous section is summarized in table 2. Only in two cases there is perfect concordance between asserted and implied rights. In the other cases there are good reasons for not expressing preferences and the respondents may protest or report WTP/WTA-measures that should not be interpreted as reflections of normal preferences but as an opinion about how initial rights should be distributed. Some of these answers may appear as anomalies. Others may not, in e.g. magnitude, diverge from what could be expected as reasonable expressions of preferences. To interpret these as reflections of preferences is nevertheless an incorrect interpretation.

Table 2. *Relations between asserted and implied rights. INC (incompatibility) means that respondents may have problems to form preferences and CON (concordance) means that preferences may be formed.*

	Respondent asserts that she has the right		Respondent asserts that other party has the right		Respondent asserts that “third party” has private or collective right
	Privately	Collectively	Privately	Collectively	
WTP-quest.	(I _{WTP}) INC	(II _{WTP}) INC	(III _{WTP}) CON	(IV _{WTP}) INC	(V _{WTP}) INC
WTA-quest.	(I _{WTA}) CON	(II _{WTA}) INC	(III _{WTA}) INC / CON	(IV _{WTA}) INC	(IV _{WTA}) INC

In this section some previous results, reported in the literature, are discussed in relation to the framework suggested above. The survey is by no means complete and should, first and foremost, be regarded as exemplifying how the framework can be used to understand some anomalies.

The survey by Spash and Hanley (1995) can be used as an example of cases II_{WTP} and/or V_{WTP}. The people advocating that e.g. other species have rights and stating a WTP equal to zero should be interpreted as refusing to answer a secondary redistribution question before the initial distribution question was clarified. A possible position among these respondents is that e.g. ecosystems have rights but that it is not up to the respondent to pay for defend these rights and that exploiters do not have the right to compensation. The respondents with WTP = 0 were asked to motivate this and could chose the alternative that “*biodiversity should be protected by law, and we shouldn’t have to pay money to protect it*”, an obvious motivation for the one with the suggested perspective of rights. In total, 31 out of 65 chose that alternative while in the ecosystem sub-sample the rate was 17 out of 19 (Spash & Hanley, 1995, table 6, p. 202). It should be noted that respondent only were allowed to choose one of the alternatives so the “protect by law” alternative might have had some influence also for the rest of the respondents. The respondents stating that “animals/ecosystems/plants should be protected irrespective of the costs” but who stated a positive WTP constitutes a problem for Spash and Hanley since they “*have indicated that a decrease in biodiversity should be avoided*” but at the same time have a too low WTP to be consistent. Note that these respondents did not have the option to stress that they “*shouldn’t have to pay money to protect it*”. Hence, those respondents may also advocate that they shouldn’t have to pay but chose to express preferences conditional to a situation they oppose. Such views are understandable if interpreted as non-preferential value-expressions but not as lexicographic preferences.

In the study by Spash (2000) 37 % were interpreted as holding MLP. From the perspective advocated here respondents have good reasons to regard the WTP-question as illegitimate since they seem to endorse that “third party” have rights (i.e. case II_{WTP} and/or V_{WTP}.) and therefore refuse to state a positive WTP-bid.

However, 15% of the total population gave positive WTP-bids even if they advocated an animal rights based position. If such answer is interpreted as an opinion about how rights should be distributed, and not as a reflection of preferences, there is no logical inconsistency in such answers.

The same kind of interpretation can be made of the results reported by Lockwood (1998). Moreover, the procedure suggested by Lockwood where different kind of value-expressions are integrated is problematic since value-expressions that are incomparable, because of their hierarchical relation, are mixed together. The hierarchical relation between values of different kind means that the question of rights should be solved prior to the question of efficiency and not simultaneously.

The results referred by Johansson-Stenman (2002) were interpreted as indication of preference reversals. The perspective of value-expressions suggested here offers another explanation. Many people may have regarded that they had the right to clean air quite making that question to an example of case II_{WTP} where incompatibility can explain anomalies. On the other hand, few should claim that they have the right to improved computer equipment, making that WTP-question to an example of case III_{WTP} with perfect concordance between implied and asserted rights. Hence, even if you have *potentially* very strong preferences for clean air you may not be in a situation where those preferences can be formed or expressed. As Brown (1984), who reported similar results, notice in a footnote there were subjects stating either that government should pay or that pollution should be strictly controlled. Hence, these results can be interpreted as a result of incompatible implied and asserted rights; you may hold a strong value for e.g. air quality improvements but you do not believe that you should have to pay for it.

Also the kind of protests reported by e.g. Söderqvist (1998) can be interpreted as expressions about how rights are distributed. People claiming that they already have paid (taxes) for something are expressing views that fit into case II_{WTP} . Payment vehicle bias, such as people protesting against taxes (as 10 % of those who didn't want to pay in the survey reported by Söderqvist did) may be interpreted as believing that they have acquired the right by already having paid for it.

Finally, the results and interpretations by Vадnjal and O'Connor (1994) can also be interpreted and expressed in terms of incompatibility between implied and asserted rights. Hence, when people expressed views of how things ought to be in society this can be interpreted as another view of how initial property rights should be distributed. As suggested above respondents may refuse to state a WTA as long as all the other owners (including future generations and/or non-human right-holder) have not agreed in selling the property²⁶. The results can thus be used as examples of cases II_{WTA} , IV_{WTA} and/or V_{WTA} .

²⁶ Vадnjal and O'Connor also conclude that people seem to report a WTP for ones right to participate in the political process. I.e. respondents were answering more as citizens, making judgements of what is right and wrong, than as consumers. The same conclusion is made by Blamey *et al.* (1995). Such

The examples above have shown that results that previously has been regarded as anomalies can be explained and understood as results of incomparability between implied and asserted rights. This does not mean that other explanations to anomalies in all cases have to be substituted. Neither should the conclusion be taken to mean that all respondents have to express opinions about rights instead of preferences. First, people may, prior to the survey, assert the same rights as implied by the question. Second, people may, as a consequence of the information in the survey, come to assert the same rights as implied by the question. Finally, some people may conditionally assert the implied rights and thereby be prepared to express conditional preferences.

5. Conclusions and discussion

The main conclusion of this paper is that it is possible to interpret and understand many anomalies as a result of incompatible implied and asserted rights. Hence, results that previous have appeared as anomalies, might be rational responses from people expressing opinions about how rights should be distributed. By assuming that some value expressions should not be interpreted as normal preferences and that acceptance of property rights is a precondition for preference formation it was shown that there, in many cases, are good reasons for people to express this kind of opinions. Since the question of initial distribution of rights must be solved prior to the question of efficiency it is rational to express ones opinions about initial rights in a situation where it is both possible and called for. Possible because answering a survey can be regarded as an opportunity to express such values and called for if the WTP/WTA-question implies a distribution of rights that is incompatible with the one asserted by the respondent. The result may be e.g. refusals to answer, protests and/or WTP/WTA-responses that, if interpreted as preferential expressions, would contradict the normal assumptions about preferences. Hence, the assumptions that some value-expressions can be interpreted as opinions about how initial rights should be distributed and that preferences may not be formed until rights are accepted do offer an alternative explanation to several “anomalies” that previously have given rise to a number of *ad hoc* explanations.

The assumptions and explanations suggested here incorporate many previous explanations into a coherent framework. Protests can in many cases be understood precisely as protests against implied rights. Refusals to make trade-offs can be understood as an outcome of answers on a superior level (about distribution of rights) instead of as expression of preferences. Hence, the suggested interpretation reduces the need for e.g. lexicographic preferences as explanation to some anomalies. Also the occurrence of inconsistent rankings can be explained as an outcome of incompatibility between implied and asserted rights, which weaken the

expressions about the desired initial distribution should not, as made clear here, be mixed with preferences over the secondary redistribution.

arguments for irrational behaviour. And finally, the fourth anomaly discussed, when people oppose an economic interpretation of their answer also this can be interpreted in terms of opinions about how initial rights should be distributed. But also other “anomalies” can be understood and interpreted. So can, for example, a comment as “*I shouldn’t have to pay*” fairly direct be interpreted as an opinion that the respondent asserts that she already has a right. Moreover, the quite vague explanations referring to “ethical motives” will be clearer if they can be expressed in terms of opinions about rights. Refusals to value environmental amenities in monetary terms may, e.g., be interpreted as a defence for rights (of species, ecosystems etc.). The opinion that the value of environmental goods, as such, cannot be measured in monetary terms, can also be interpreted as protests against the implied rights.

One property of the suggested interpretation is that it leaves the economic description of the actual preferences unaffected. Once the preferences are formed the normal assumptions are valid. This may be regarded as an advantage compared to e.g. explanations as the occurrence of lexicographic preferences. Hence, in circumstances where property rights are accepted and cannot be affected, value expressions can still be interpreted as reflecting normal preferences. In a market situation the property rights are normally sufficiently accepted and the market is probably not regarded as an arena for any claims for secondary redistribution of rights.

It should be noted that it, empirically, might be difficult to differentiate between, i) answers that are expressions of preferences and ii) answers that are expressions of opinions about how initial rights should be distributed. People that intend to protest against implied rights may give answers that give the incorrect impression of reflecting ordinary preferences. Hence, it may be that more there are respondents actually expressing opinions about initial rights than what is indicated by the occurrence of anomalies.

The results of the analysis above are important, as discussed above, for how results of SP-surveys should be interpreted. Even though it is not an aim of this paper, it should be noted that the result of course entail complications for how SP-surveys should be designed in order to make people form and express preferences. Generally, it can be said that surveys should be designed so that people, at least conditionally, accept the implied rights. This means that the WTP-question may be problematic in cases where people assert that they have the right, e.g. because they for long time have had the possibility to, without paying, enjoy a landscape etc. Hence, the analysis in this paper offers an argument against the recommendation to always use the WTP-format.

Moreover, for amenities with collective rights, as asserted by the respondent, both the WTP- and the WTA-question imply rights that may be incompatible with the asserted rights. This means that, for many environmental goods, neither the WTP- nor the WTA-question may imply rights that can be accepted by the respondents. The problem is not, according to the analysis suggested here, that the amenities are “environmental” but rather that respondents assert that e.g. future

generations or other species have rights that are incompatible with the implied rights. This conclusion involves probably even greater problems for SP-methods. If a right means that the owner explicitly must agree on selling, and if people assert that future generations, that cannot agree explicitly, have rights, then respondents may refuse to get involved in any (even hypothetical) exchanges at all.

One may argue that information about people's opinions about how initial rights should be distributed is an interesting result rather than a problem. Such information may even be regarded as more relevant, for example *if* a certain policy is regarded as an initial distribution (of previously undistributed) rights. In such cases it is important to explicitly design the survey to answer the question about how initial rights should be distributed. Otherwise, there is a risk to draw the incorrect conclusion that all respondents that correctly answer the WTP- or WTA-question support the implied rights. First, as mentioned above, answers may be misinterpreted as reflections of preferences. Second, some people may, when answering the survey, form preferences in relation to the rights implied by the question. This may be since they, just as intended in a normal SP-survey, don't regard the situation as a situation where the distribution of rights can be affected. They may however, if they were confronted with the question, have expressed opinions about the distribution of rights at odds with the implied rights.

The last comments may be regarded as an argument for adding an explicit question about people's opinions about the distribution of rights to SP-surveys. An additional question can, possibly, derive more information about the values people hold. But, does it solve the problem of potential incompatibility between asserted and implied rights? One hypothesis is that the possibility to explicitly express one's opinions about initial distribution of rights will make people more prepared to, at least conditionally, express also preferences. On the other hand, such an explicit question on opinions about initial distribution of rights could just as well make more respondents more reluctant to express preferences. How people actually would react is an empirical question, and a question for further research.

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