

Weikard, Hans-Peter

Working Paper

Sustainable freedom of choice: a new concept

Finanzwissenschaftliche Diskussionsbeiträge, No. 11

Provided in Cooperation with:

Chair of Public Finance, University of Potsdam

Suggested Citation: Weikard, Hans-Peter (1996) : Sustainable freedom of choice: a new concept, Finanzwissenschaftliche Diskussionsbeiträge, No. 11, Universität Potsdam, Lehrstuhl Finanzwissenschaft, Potsdam,
<https://nbn-resolving.de/urn:nbn:de:kobv:517-opus-8484>

This Version is available at:

<https://hdl.handle.net/10419/30792>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

UNIVERSITÄT POTSDAM

WIRTSCHAFTS- UND SOZIALWISSENSCHAFTLICHE FAKULTÄT

FINANZWISSENSCHAFTLICHE DISKUSSIONSBEITRÄGE

Sustainable Freedom of Choice – A New Concept

by

Hans-Peter Weikard



Diskussionsbeitrag Nr. 11

Potsdam 1996

Hans-Peter Weikard

University of Potsdam
August-Bebel-Straße 89
D-14482 Potsdam, Germany
E-mail: weikard@rz.uni-potsdam.de

Sustainable Freedom of Choice – A New Concept

Paper presented at the International Symposium

"Managing Sustainability From The Ground Up"

Island of Vilm, Germany, 24-28 August 1996

Discussion paper series editor: Prof. Dr. Hans-Georg Petersen, University of Potsdam, Faculty of Economics and Social Sciences, P.O. Box 900327, D-14439 Potsdam. Phone: +49-331-977-3394; Fax: +49-331-977-3392; Email: lsfiwi@rz.uni-potsdam.de

ISSN 0948 - 7549

Sustainable Freedom of Choice – A New Concept

Hans-Peter Weikard

Abstract: The value concept of traditional resource economics is welfare. Therefore, sustainability of welfare is often taken to characterise our obligations to future generations. This paper argues that this view is inappropriate because it leaves no room for future generations autonomy. Future generations should be free to make their own decisions. Consequently *freedom of choice* is the appropriate value concept on which resource economics should be based. The concept of sustainability receives a new interpretation. Sustainability is a principle of intertemporal distributive justice which requires equitable opportunities across generations.

JEL Classification: Q20, D63

1 Introduction

The notion of sustainability has a long history. It has been used in forestry and agriculture at least since the eighteenth century.¹ In its original meaning the concept refers to the economic value of land use: a forestry or farming system is sustainable if its yields are non-declining in the long-run. Only recently 'sustainability' has come to be used in broader sense. Its meaning has been pushed beyond its original application in farm and forest management towards an application in the management of the social system at large. The World Commission on Environment and Development (1987) defines sustainable development with reference to the needs of future generations. While 'sustainability' has gained a broader meaning, the concept has also gained more importance in the political debate. Furthermore, in environmental and ecological economics 'sustainability' has become one of the key concepts. Although it is widely used in the discipline there is little agreement about its precise meaning.² Unless 'sustainability' is clearly defined it may do more harm than good in further research and the assessment of environmental policies. Already, the notion of sustainable development has come under attack.³ Therefore, it seems to be necessary for the development of the discipline to clarify its basis.

¹ According to Peters (1984, 4) the German forester Carlowitz used the concept as early as 1713.

² Pezzey (1992), appendix 1, provides an overview.

³ Cf. e.g. Beckerman (1994).

The necessary clarification can be phrased in a single question: Sustainability of what? What it means to sustain something is hardly debatable. To sustain x simply means that x should not decrease over time. The problem is to fill in the right characterisation for x . To do this requires a theory of value. The aim of this paper is to contribute to the development of such a theory.

The value concept used in traditional resource economics is individual welfare, sometimes dubbed 'utility'. However, there are doubts about its appropriateness. Talbot Page (1982) writes:

"As future opportunity is more in our control than future utility, it would seem that opportunity is a more sensible object of intergenerational justice. With some effort we can control the form of the heritage to be passed on to the next generation. It is beyond the control of the present generation to ensure that the next one will be happy or hardworking. It is beyond our control to increase their welfare; we can only assure them of certain opportunities for happiness that we foresee will be essential."

The point Page is making is important. Welfare (or utility) may not be an appropriate value concept for resource economics because it is hardly applicable. It is beyond our control to increase the welfare of future generations. Instead we should focus on future generations' opportunities. This paper adds another and, I believe, even more important argument against the welfarist basis of resource economics. Future generations should not only enjoy at least the same level of welfare than our generation does, they are also entitled to enjoy at least the same degree of freedom. Before I explain this in greater detail, some remarks on welfarism are in order.

2 Sen's critique of welfarism

There is no doubt about the strong influence of utilitarianism on the development of modern welfare economics. Utilitarianism can be described by two major components: the maximising principle and a welfarist value theory. Both components are clearly features of modern welfare economics. The welfarist theory of value claims that the desirability of a social situation depends on the utility enjoyed by the individuals, where "utility" refers to preference satisfaction.⁴ In a number of important papers Amartya Sen has raised fundamental objections to welfarism.

In his famous paper on *The Impossibility of a Paretian Liberal* Sen has shown that the Pareto principle, the corner stone of modern welfare economics, is incompatible with individual

⁴ Cf. Broome (1991).

liberty.⁵ In further research Sen has explored the philosophical background of his impossibility result.⁶ The tension between welfarism and individual rights can be traced back to the kind of information which is taken to be relevant. Sen's criticism of welfarism is that it does not use the right kind of information to assess the desirability of social states.⁷ On the one hand welfarism neglects morally important information while on the other hand some morally insignificant information is included. Because of its focus on end-states welfarist judgements do not take into account how a particular situation has come about. An outcome may be judged as equitable or fair, even if reached through the violation of someone's rights. This untenable conclusion can be avoided, if information about the process by which an outcome is reached takes the appropriate role. An end-state oriented assessment of social situations neglects individuals' rights and, therefore, some morally relevant information.⁸ The welfarist information set is too narrow in this respect, but too wide in others. Not all individual welfare seems morally relevant as the case of expensive tastes shows. According to the welfarist view it may well be the case that caviar should be provided to the rich instead of decent housing to the poor. Such examples make clear that some welfare an individual achieves may be morally irrelevant.⁹

This criticism has opened the recent debate on value theory, in which a number of candidates compete to take the place of welfare. A brief list includes: primary goods (Rawls 1971), resources (Dworkin 1981), opportunity for welfare (Arneson 1989, Cohen 1989, Roemer 1985) and capabilities (Sen 1985). Despite the differences between these proposed values, they have a common feature. The focus of an assessment of social states has shifted from welfare to opportunities. Welfarism is concerned with final results, while a value theory based on individuals' opportunities regards results as morally irrelevant, because individuals bear responsibility for their choices. The concern for welfare is replaced by a concern for opportunities in conjunction with free choice. If freedom of choice is satisfied, opportunities instead of welfare should count in the assessment of a social situation. Consequently, the key problem of normative economics is no longer welfare aggregation, but aggregation of opportunities. This raises a number of questions to which I turn below.

In a more recent contribution Sen (1988) has approached the issue of freedom of choice from a slightly different perspective. Freedom of choice has undoubtedly an instrumental value. A well-known argument in favour of market economies is their productivity which stems from freedom of choice. Freedom can enhance welfare. If, however, freedom has some value in itself over and above what it contributes to welfare, we will have to reconsider the very idea

⁵ This was and still is regarded as a major challenge to the discipline. Sen's (1970, Chapter 6*;1970a) result has generated a vast literature. Wriglesworth (1985) provides an extensive survey.

⁶ Cf. Sen (1979), (1982), (1985a) and Sen/Williams (eds., 1982).

⁷ Cf. Sen (1991).

⁸ A similar argument is provided by Nozick (1974).

⁹ Goodin (1986) discusses several cases which suggest a "laundering of preferences".

of welfarism. Welfarism is not only incompatible with individual rights, it also neglects personal autonomy and the intrinsic value of free choice.

The concept of freedom of choice will be further explained in the next section. Section 4 turns to the problem of the ranking of opportunity sets. It will become clear that such a ranking will have to depend on conditions of uncertainty. The aim of the paper will be to introduce the concept of freedom of choice to resource economics. In this context uncertainty matters; section 5 distinguishes two types of uncertainty. Finally, in section 6 the problem of equality of opportunities between generations is discussed. Section 7 concludes.

3 Freedom of choice

In the last section I have briefly surveyed some of the reasons to assign a place in the theory of value to freedom of choice. The purpose of this section is to describe the concept in greater detail. To begin with, the intrinsic value of freedom choice must be emphasised. If something is intrinsically valuable it is valued for its own sake, not just as a means to achieve something else. The value of a thing as a means is called its instrumental value. Money, for instance, is valued because it can be used to buy commodities which enhance a person's well-being. In this respect money has instrumental value. This does not exclude the possibility that money may have intrinsic value as well. Those who just like to have a lot of money in the bank attach an intrinsic value to money. Generally it is an empirical question whether something has intrinsic value or not. Mother Theresa, for instance, may not attach any intrinsic value to her own well-being, but only instrumental value; she does not care about her own well-being, but about bettering the lot of the poor.

These remarks apply to freedom of choice, too. One can imagine an individual who does not care about free choice. Suppose such an individual p prefers to read newspaper x when newspapers y and z are also available. If y and z are abolished by the government p would not be worse off, since x is still available and, by assumption, this is all p cares about. However most people, including the readers of x , will be affected quite differently by the government's action. If x is the only newspaper permitted, people would probably rather prefer not to read it; at least they would miss the opportunity for choice.¹⁰

It is an empirical claim that freedom of choice has intrinsic value, and it seems to be a true claim. It is a deep-seated feature of human psychology that people want to make their own decisions, even their own mistakes. It may be true that some one else knows best what is good for a person, but still it should be up to her, what to choose. Very briefly stated, autonomy matters.¹¹

¹⁰ The example is Sen's (1988, 292).

¹¹ In *Brave New World* Huxley describes a society where people are happy but enjoy no freedom.

Intrinsic value of freedom of choice is incompatible with welfarism. From a welfarist perspective the value of a set of opportunities (e.g. to read newspapers x, y, z) is determined by the value of the best element of the set. A contraction of the set does not alter its value as long as the best element remains to be available. In modern welfare economics, welfare is closely linked to choice.¹² Formulated in terms of choice, it is a rationality condition that, if x is chosen from a set S and T is a subset of S and contains x , then x should be chosen from T .¹³ A choice from S leads to the same outcome (or preference satisfaction, or welfare) than a choice from T . As a consequence we need a broader framework than the one welfarism offers. Such a framework must allow for attaching value to opportunities regardless of whether or not they will finally be chosen. Some steps in this direction have been taken in the recent literature addressing the problem of ranking opportunity sets.

However important the intrinsic value of free choice may be, the instrumental value should not be neglected. Free choice can be an important device to increase well-being. In an uncertain world an individual may want to delay a decision, while keeping the options, because later choices can be based on more information. Learning and experience change the preference ordering of outcomes. The value attached to a particular outcome may change as more information about the particular features of that outcome arrives. In a world of perfect information freedom of choice cannot have an instrumental value. All choices could be made on the spot picking the best course of action. A lock-in in the best course of action cannot be improved upon. In other words, there is no welfare gain in leaving any choices for later. However, uncertainty is an important feature of our world. We have to consider both, intrinsic and instrumental value of freedom of choice. First I turn to intrinsic value.

4 Ranking opportunity sets

Of course, it is a crucial question how social situations can be assessed when freedom of choice matters. We want to know how different sets of opportunities from which an individual can choose can be compared. A simple answer would be to give the individual a choice between opportunity sets – quite similar to the way commodity bundles are ranked in traditional welfare economics. However, we also want to impose some requirements on the ranking. Pattanaik and Xu (1990) have introduced a set of axioms to capture the idea of intrinsic value of freedom of choice. From these axioms they derive a characterisation result.

To explain this in more detail some notation is needed. Let $X = \{x, y, z, \dots\}$ be the set of all possible alternatives. The set of all non-empty subsets of X is denoted Z . Elements of Z , the subsets of X , are denoted S, T, \dots . \geq_c is a binary, reflexive, and complete ordering on Z . The

¹² Cf. Samuelson (1938), Houthakker (1950) or any text book in microeconomics. See Broome (1978) for a critique.

¹³ Sen (1970, 17), property α .

expression " $S \geq_c T$ " is to be interpreted as " S offers as least as much freedom of choice as T ". The indifference relation \sim_c and the strict relation $>_c$ are defined in the usual way.

Pattanaik and Xu (1990, 386) propose three Axioms:

INS (Indifference between No-choice Situations): $x, y \in X \Rightarrow \{x\} \sim_c \{y\}$.

SM (Strict Monotonicity): for all $x, y \in X$ and $(x \neq y) \Rightarrow \{x, y\} >_c \{y\}$.

IND (Independence): for all $S, T \in Z$ and for all $x \in X \setminus (S \cup T) \Rightarrow [S \geq_c T \Leftrightarrow S \cup \{x\} \geq_c T \cup \{x\}]$.

Pattanaik and Xu (1990) prove the following

THEOREM 1: The unique reflexive and transitive relation \geq_c satisfying INS, SM and IND, is the cardinality relation, that is the relation which ranks sets according to the number of elements they contain.

Two particular features of Pattanaik and Xu's axioms should be emphasised. If the axioms describe the valuation of free choice, they do indeed only capture the intrinsic value. INS does not leave any room for instrumental value. According to INS, $\{x\}$ offers the same degree of freedom of choice as $\{y\}$ regardless of any preference the individual might have between the two alternatives x and y as such. The intuitive idea for this axiom is simple. If there is no choice to be made, i.e. if opportunity sets are singletons, then there is no freedom of choice and hence the degree of freedom is equal, namely zero.

The second remark concerns axiom IND. It says that an additional alternative attached to each of (any) two opportunity sets does not change the ranking of these sets regardless of what they contain. This axiom poses a difficulty which has been discussed as the red-car/blue-car problem in the literature.¹⁴ To explain its impact Pattanaik and Xu (1990) give the following example. Let $S = \{red\ car\}$ and $T = \{train\}$ be sets of opportunities for transportation. According to axiom INS, they offer the same degree of freedom. Now we add a new transportation opportunity *blue car* to S and T . We obtain $S' = \{red\ car, blue\ car\}$ and $T' = \{train, blue\ car\}$, respectively. IND requires that T' offers the same degree of freedom as S' . Intuitively, however, it is clear that T' offers a larger degree of freedom. What Pattanaik and Xu point out by means of this example, is that the value of freedom cannot be determined by the number of feasible alternatives alone – variety matters. The cardinality ranking does not account for this.

These considerations reveal another problem. Can we assume that the number of alternatives is countable? And if so, how can the alternatives be individuated? To solve these problems we need a measure of diverseness.¹⁵ However, assuming we have such measures, some other difficulties remain. What about adding alternatives which are sufficiently different from the

¹⁴ Cf. e.g. Sen (1991), Klemisch-Ahlert (1993), Puppe (1995), Bavetta/del Seta (1996).

¹⁵ Bavetta/del Seta (1996) go a step in this direction. Suppes (1996) approaches measurement of freedom from a different angle.

initial sets, but which are clearly bad? Sen (1991, 24) suggests that it may not add to your freedom if you get as an additional alternative to be beheaded at dawn. Considering such cases points back to preferences. The value of opportunity sets will depend on what people care about.

While welfarism bases all judgements on preference, the Pattanaik/Xu characterisation of the value of freedom does completely ignore preference. Both seem to be extreme positions between which one should look for compromise. Klemisch-Ahlert (1993) proposes to attach a weight $\alpha \in \mathbf{R}_+$ to every $x \in X$ which reflects individual preferences on the set X . The value of an opportunity set can then be defined by a weighted sum of the value of the alternatives in the set. The following condition can be used to replace INS and to characterise a class of reflexive, transitive and complete relations \geq_s on Z :

WSR (Weighted Sum Ranking) : For all $S, T \subseteq X$, $S \geq_s T \Leftrightarrow \sum_{x \in S} \alpha(x) \geq \sum_{x \in T} \alpha(x)$.¹⁶

Puppe (1994) proposes a different set of axioms. He introduces a condition

PFC (Preference for Freedom of Choice): for all $S \in Z$ exists an $x \in S$, such that $S >_c S \setminus \{x\}$.

According to axiom PFC there *exists* an essential alternative in every opportunity set. If such an alternative is removed the resulting opportunity set is strictly worse than the initial one. In contrast, in Pattanaik/Xu (1990) *all* alternatives are essential. Essential alternatives $E(S)$ can be defined as follows:

$$E(S) := \{x \in S \mid S >_c S \setminus \{x\}\}.$$

Puppe (1994) weakens the monotonicity and the independence axiom.

M (Monotonicity): for all $S, T \subseteq Z$, $T \subseteq S \Rightarrow S \geq_c T$.

INA (Independence of Non-essential alternatives): for all $S \in Z$, $E(S) \sim_c S$.

He proves:

THEOREM 2: A relation \geq_c satisfies axioms PFC, M, and INA if and only if

for all for all $S, T \subseteq Z$, $S \geq_c T \Leftrightarrow E(S \cup T) \subseteq S$.

In other words, \geq_c is a domination relation with regard to essential alternatives. This relation is characterised by weaker axioms – compared to INS, SM and IND. Note however, that the relation is incomplete. It does not determine a ranking of undominated sets.

These results already indicate a tension between the intrinsic value of freedom of choice and the traditional models of rational choice. Gravel (1994) and Puppe (1995) focus on this tension. Without going into further detail here, the results of their work show that orderings

¹⁶ Cf. Klemisch-Ahlert (1993). This assumption, of course, contains INS as the special case where α is the same for all x , i.e. $\alpha(x) = \text{const}$. See Bossert/Pattanaik/Xu (1994) for a similar approach.

(reflexive, transitive and complete rankings) of opportunity sets which respect requirements of freedom of choice are incompatible with complete preference orderings on X .

The intuition for this result is as follows. Consider a person having a complete preference order over the set of alternatives. Whatever the opportunity set given to this person may be, her choice is already clear. If there is no doubt about future choice, then there is no reason to value opportunities that would not be chosen anyway. Applying Puppe's terminology to this case we can say that an alternative is essential in a set S , if and only if it is a best element of S in the sense that it is at least as good as any element in S . With a fixed and complete preference ordering we are back to a ranking of opportunity sets according to best elements. This means we are back to welfarism. Therefore, we are lead to the following conclusion. In order to make sense of the notion of freedom of choice preferences must either be incomplete or uncertain. Incomplete preferences leave room for postponing certain choices or a preference for flexibility, which allows to change one's mind at a later stage.¹⁷

5 Uncertainty of the Future

So far I mentioned the time structure of decision making only implicitly. Of course, the concepts "uncertainty" and "future" are inextricably intertwined. In standard models of decision making it is assumed that individuals act upon given information, be it complete or incomplete. In the case of incomplete information it is assumed that individuals at least know the possibilities and that they can attach probabilities to all possibilities. Furthermore, complete and well-shaped preferences are assumed, in the sense that preferences satisfy the axioms given by von Neumann/Morgenstern (1947, appendix) or Savage (1954). Basically, uncertainty is reduced to risk, and time is excluded from these models of decision making. It is assumed that you know what you don't know. The focus is on single decisions. A broader theory of decision making must, however, be concerned with sequences of decisions where new information arrives as time goes by.¹⁸

There are two cases to be considered: uncertainty of the environment and uncertainty of the preferences. In both cases freedom of choice is valuable. In the former case a larger opportunity set has instrumental value, in latter case it has intrinsic as well as instrumental value. I first turn to the case of an uncertain environment. The time structure of decision making will now be made explicit. For simplicity we consider only two stages. For illustration consider the following example.

¹⁷ See Arrow (1995) for similar argument.

¹⁸ Of course, the von Neumann/Morgenstern-Savage approach will still be a corner stone of any such broader theory.

You plan to go out for dinner. At a first stage you choose a restaurant, at the second stage you choose a meal. Suppose you know the menus of the restaurants and your preferences over the set of available meals are complete and satisfy the usual conditions. As was argued above, your choice will be the restaurant which offers the best meal regardless of what else is on the menu. There is no value to enlarge the opportunity set, unless better meals become available. This is different if there is uncertainty. If, with some positive probability, particular meals will be unavailable, then a larger opportunity set offers better chances to get at least an acceptable meal. Using the notation from section 3, let x^* be the best meal. Choosing a restaurant with the menu $\{x^*\}$ will be a risky choice compared to, say, another restaurant offering $\{y, z\}$. Menu $\{y, z\}$ does not offer your favourite meal, but it reduces the risk of having to return home hungry. Here, the value of the opportunities is entirely instrumental. They count because they add to the expected utility of the set.

The second case is different. The uncertainty of future preferences involves both, intrinsic and instrumental value of freedom of choice. An individual may value a larger menu S because it allows for postponing the choice of a meal to a later stage. This allows for reconsideration and revision. Later choices can be made on the basis of better information. This is one reason to postpone decisions. If future preferences are not yet known and the individual attaches probabilities to different orderings she might have in the future, a larger menu might be better in terms of expected utility. The case of uncertain preferences can be reformulated in an expected utility framework.¹⁹ Here, again, freedom of choice – or flexibility, for that matter – has instrumental value. For the instrumental value it does not matter how the final preferences are determined. It is sufficient to assume that they are uncertain. There are two possibilities. Either preferences change endogenously, while the causal mechanisms are not fully known, or there are some exogenous influences on preferences also not known in advance. The latter case includes the arrival of new information about the meals, say, making the individual reconsider her preferences.

But there is also a more important third possibility. An individual attaches value to her autonomy – strictly speaking, to the autonomy of her later selves. A decision is postponed not for the reason that preferences are not yet *known*, but simply because the individual *wants* to leave the choice and the preference formation for later. Thus, intrinsic value of freedom of choice boils down to a preference for leaving choices for later, keeping options to change one's mind and to develop one's personality. In this case uncertainty is only a by-product of a deliberate delay of decisions. This is an important point I would like to emphasise. Keeping options for later may have an aspect of insurance (the instrumental value), but, in addition, it is also a matter of what kind of a person someone wants to be. To some extent people do want to keep options even if there is a safe way to preference satisfaction.

¹⁹ See, for instance, Koopmans (1964) and Kreps (1979).

The example of restaurants and meals is, perhaps, too trivial to deal with these important features of human psychology. A more appropriate example is this: A young person chooses a general subject for study, philosophy or mathematics for instance, to postpone the decision upon her occupation. Had she chosen law, she would become a lawyer. She would be locked-in; there are no further decisions to make. From her point of view, it is not that it is bad to be a lawyer, indeed she thinks it is a very interesting job, it is just that she does not want to be a person for whom all (essential) decisions are already made. She likes to have options for her future life.

6 Equal and sustainable freedom of choice

In section 2 I pointed out the reasons why normative economics should go beyond welfarism. The same reasons do apply, of course, to resource economics. Indeed resource economics is a most suitable candidate to consider the impact of the freedom of choice approach to normative economics. Three basic conditions each of which is sufficient for intrinsic or instrumental value of free choice are satisfied: (a) uncertainty of the environment, in particular production possibilities, (b) uncertainty of future generations' preferences, and (c) that future generations should be free to make their own decisions; we should respect the autonomy of future generations. It should be clear from the discussion so far that the autonomy of future generations is incompatible with welfarism. Therefore, normative resource economics will have to focus on opportunity sets. Problems of valuation have already been discussed. To proceed a step further, we have to address the problem of aggregation. An assessment of social situations will have to rely on interpersonal comparability of opportunities. Given such comparability one can then take an egalitarian or a maximising approach. The egalitarian claim is that all individuals should enjoy the same degree of freedom. In contrast, one could also claim that maximising the overall freedom is the suitable social goal. However, the maximising view violates some basic intuitions about natural rights.

Rawls's (1971) well-known complaint against utilitarianism is that maximising welfare can violate the rights of some individuals; their welfare loss is simply outweighed by others' welfare gain. The welfare an individual enjoys is considered as nothing but a means to enhance total welfare. A similar complaint applies to maximising freedom. Maximising freedom as a social goal would allow to take away opportunities from one individual to enlarge others' opportunity sets, provided total freedom increases thereby. Thus, the maximising rule is incompatible with the view that individuals have basic rights and should enjoy basic freedoms. Applied to the intergenerational case, this just means that our generation cannot be justified to make choices from a large opportunity set at the expense of later generations opportunities, even if a suitable aggregation would lead to the result that this is better in terms of total opportunities.

In the following, I adopt the view that normative resource economics should aim to define a concept of equal opportunities and work out the implications for the intergenerational case. Of course, a proper defence of this view would require further arguments which lead to deep philosophical questions. I am not going to pursue these here. Basically, I think a maximising policy is incompatible with methodological individualism and should be rejected. In contrast, the view that all individuals should have equitable (or fair) opportunities, regardless to which generation they belong, can be reconciled with an individualist methodology.²⁰

The notion of equal opportunities, sometimes called equity, requires further explanation. Le Grand (1991, 87), for instance, proposes the following definition of equity: "... *a distribution is equitable if it is the outcome of informed individuals choosing over equal choice sets*" (italics in the original). This definition captures the idea that it is not necessarily the outcome that matters. Differences in outcome do not count as inequitable if they result from informed choices from equal sets.²¹ However, there are two problems with this definition which can be explained by means of example.²² Consider Max and Nancy. Both are equally educated and equally skilled. However, Max enjoys sitting in the sun in the afternoon and watching TV in the evening while Nancy works hard and is a successful businesswoman. Max lives from a small income in poor housing conditions while Nancy earns a lot and has just bought a nice flat. Though the outcome is very unequal it should not be considered inequitable. Both have equal choice sets. Differences are due to different choices. Now, the first problem is that the definition is not complete. It mentions just one case where a distribution is equitable. But there may be others. It could be argued that a situation in which two persons choose from different choice sets can nevertheless be equitable. Suppose Nancy has an additional element in her choice set, to become a teacher, say, but she does not want to become a teacher anyway. Now she has a greater choice set than Max. However, the outcome (which is the same as before) might still be regarded as equitable. Unequal choice sets do not necessarily lead to inequitable outcomes. In the terminology of section 4, Nancy's additional alternative is non-essential. Secondly, the definition is too strong in some other cases. In the example, Max and Nancy have different preferences and we can assume that a particular alternative is of different value to them. Compare two situations in which both have equal choice sets. In situation *A* Max chooses *watching TV* and Nancy chooses *working* from the choice set. In situation *B* the choice set is smaller but still the same for both. As it happens, the most entertaining TV programs have vanished. Therefore Max alters his choice and goes fishing while Nancy still works as before. According to the definition the outcome is equitable in both situations,

²⁰ On the face of it, this claim is counter-intuitive. Maximisation is widely used in economics, and economics claims to have adopted an individualist methodology. However this is not so. The individuals are not concerned with total welfare but with individual welfare. On the relationship of equity (or equality) and methodological individualism cf. Broome (1989).

²¹ For similar approaches see Dworkin's (1981) equality of access to resources and Sen's (1985) equality of capabilities. See also Fleurbaey (1995).

²² The example is taken from my (1993) review of Le Grand's *Equity and Choice*.

however Max is worse off in situation *B* compared to situation *A* while nothing has changed for Nancy. If people have different preferences and presumably different valuations of certain states or alternatives the equality of choice sets is not sufficient to guarantee the equity of the outcome. Again, this points back to the discussion in section 4. The value of an opportunity set is not independent of preferences. Equal opportunities for different persons may not be equitable.

How can values of opportunity sets be interpersonally compared? For fixed preferences the problem can be reduced to interpersonal comparisons of welfare.²³ However, this is not the case we are concerned with here. Our problem is how the value of opportunity sets can be assessed in the case of uncertainty or incompleteness of future preferences. In this case opportunity for welfare matters as well, but only in addition to the intrinsic value of freedom of choice. Opportunity sets are to be compared taking into account opportunity for welfare *and* opportunity for choice.²⁴ Autonomy requires to leave choices for later. Accordingly, the set comparison cannot be based on information about preferences over those alternatives, which are essential for later choice.

From this point of view a concern for the future amounts to the claim that future generations should enjoy (at least) the same degree of freedom than we do. The concept of sustainability should be interpreted in this sense. What is to be sustained is neither welfare nor resources, but opportunities for choice.

In the recent debate on sustainability, two interpretations mark the edges of a spectrum of concepts. On one side, weak sustainability is the claim that welfare should be sustained. This means that for each generation *t* and the subsequent generation *t+1*, *t+1* is at least as well off as *t* (in terms of welfare). On the other side of the spectrum lies the concept of strong sustainability which denies the substitutability of various input factors. According to this view, not welfare but resources ought to be sustained. Sustaining opportunities is a middle position in this debate. It goes beyond welfare, but allows for substitution of natural resources as long as essential choices remain available.

The focus on opportunities instead of welfare has, of course, long been argued for by conservationists. Ciriacy-Wantrup (1952) has introduced the concept of a "safe minimum standard of conservation". A claim to equal opportunities, however, goes beyond the "safe minimum standard". Page (1982) has argued for equal opportunities mainly for lack of information about future welfare and lack of power to control future events. The arguments provided above give backing to Page's claim. But lacking information and power to control are only secondary reasons. More important is the respect for future generations autonomy.

²³ Cf. the papers in Elster and Roemer (eds., 1991) for recent approaches and, in particular, Scanlon (1991).

²⁴ See Carter (1995) for a discussion.

They should be free to make their own choices at least to the same degree as we are free to make our choices.

7 Concluding remarks

If we consider autonomy to be an important value, the welfarist view becomes untenable. An appropriate theory of value should take into account a preference for freedom of choice; even more so, if decisions not only affect opportunities of the decision maker but other individuals, namely those of future generations. If we do not want to take a paternalistic attitude towards future generations, we should leave for them opportunities to make their own decisions.

Some concepts and problems of a value theory based on freedom of choice have been discussed in the paper. A first result is that uncertainty is partly a by-product of autonomy. Therefore, in addition to the intrinsic value attached to freedom of choice we ought to count the instrumental value. With uncertain preferences larger opportunity sets may offer a greater expected value. Thirdly, we have to consider a value component which is due to the uncertainty of future production possibilities. With limited knowledge we are unable to assess the damage that may result from lost opportunities. A case to illustrate this point is biodiversity. Regardless of any other reasons, we have to protect species because we lack sufficient knowledge about the value of future opportunities offered by the existence of a species.

The concept of sustainability receives a new interpretation. Sustainability is a principle of intertemporal distributive justice which requires equitable opportunities across generations.

If intergenerational equity is required and accepted and if freedom of choice is the appropriate value concept, we are under a moral obligation to leave the world's resources intact, at least to an extent such that future generations have equitable opportunities.

References

- Arneson, Richard (1989) Equality and Equal Opportunity for Welfare. *Philosophical Studies* 56, 77-93.
- Arrow, Kenneth J. (1995) A Note on Freedom and Flexibility. in: Basu, Kaushik/Pattanaik, Prasanta/Suzumura, Kotaro (eds., 1995) *Choice, Welfare, and Development: A Festschrift in Honour of Amartya K. Sen*. Oxford: Clarendon. 7-16.
- Beckerman, Wilfred (1994) "Sustainable Development": Is it a Useful Concept? *Environmental Values* 3, 191-209.
- Bavetta, Sebastiano/del Seta, Marco (1996) Rough Set Approximations and the Syntax of Freedom. Paper presented at the 3rd international meeting of the Society for Social Choice and Welfare. Maastricht.
- Bossert, Walter/Pattanaik, Prasanta/Xu, Yongsheng (1994) Ranking Opportunity Sets: An Axiomatic Approach. *Journal of Economic Theory* 63, 326-345.
- Broome, John (1978) Choice and Value in Economics. *Oxford Economic Papers* 30, 313-333.
- Broome, John (1989) What's the Good of Equality? in: Hey, John D. (ed., 1989) *Current Issues in Microeconomics*. Houndmills, Basingstoke, Hampshire: Macmillan. 236-262, 286-288.
- Broome, John (1991) "Utility". *Economics and Philosophy* 7, 1-12.
- Carter, Ian (1995) Interpersonal Comparisons of Freedom. *Economics and Philosophy* 11, 1-23.
- Ciriacy-Wantrup, S.V. (1952) *Resource Conservation: Economics and Policies*. Berkeley: University of California Press.
- Cohen, G.A. (1989) On the Currency of Egalitarian Justice. *Ethics* 99, 906-944.
- Dworkin, Ronald (1981) What is Equality? Part 1: Equality of Welfare. / Part 2: Equality of Resources. *Philosophy and Public Affairs* 10, 185-246 / 283-345.
- Elster, Jon/Roemer, John E. (Hg., 1991) *Interpersonal Comparisons of Well-Being*. Cambridge: Cambridge University Press.
- Fleurbaey, Marc (1995) Equal Opportunity or Equal Social Outcome? *Economics and Philosophy* 11, 25-55.
- Goodin, Robert E. (1986) Laundering Preferences. In: Elster, Jon/Hylland, Aanund (1986) *Foundations of Social Choice Theory*. Cambridge/Oslo: Cambridge University Press/Universitetsforlaget. 75-101.
- Gravel, Nicholas (1994) Can a Ranking of Opportunity Sets Attach an Intrinsic Importance to Freedom of Choice? *American Economic Review* 84 (P&P) 454-458.
- Houthakker, H.S. (1950) Revealed Preference and the Utility Function. *Economica* 17, 159-174.
- Huxley, Aldous (1932) *Brave New World*. Reprinted Harmondsworth 1969: Penguin.
- Klemisch-Ahlert, Marlies (1993) Freedom of Choice: A Comparison of Different Rankings of Opportunity Sets. *Social Choice and Welfare* 10, 189-207.
- Koopmans, Tjalling C. (1964) On the Flexibility of Future Preferences. In: Shelly, M.W./ Bryan, G.L. (1964) *Human Judgements and Optimality*. New York: Wiley. 243-254.
- Kreps, David M. (1979) A Representation Theorem for "Preference for Flexibility". *Econometrica* 47, 565-577.
- Le Grand, Julian (1991) *Equity and Choice*. London: Harper Collins.
- von Neumann, John/Morgenstern, Oskar (1947) *Theory of Games and Economic Behavior*. Second edition, Princeton: Princeton University Press.
- Nozick, Robert (1974) *Anarchy, State, and Utopia*. Reprinted Oxford 1980: Basil Blackwell.
- Page, Talbot (1982) Intergenerational Justice as Opportunity. In: MacLean, Douglas/Brown, Peter (eds., 1982) *Energy and the Future*. Totowa: Rowman and Littlefield.
- Pattanaik, Prasanta/ Xu, Yongsheng (1990) On Ranking Opportunity Sets in Terms of Freedom of Choice. *Recherches Economiques de Louvain* 56, 383-390.

- Peters, Wiebke (1984) Die Nachhaltigkeit als Grundsatz der Forstwirtschaft, ihre Verankerung in der Gesetzgebung und ihre Bedeutung in der Praxis. Dissertation, Hamburg.
- Pezzey, John (1992) Sustainable Development Concepts: An Economic Analysis. World Bank Environment Paper No. 2. Washington, D.C.: The World Bank.
- Puppe, Clemens (1994) An Axiomatic Approach to "Preference for Freedom of Choice". Paper presented at the 2nd international meeting of the Society for Social Choice and Welfare, Rochester.
- Puppe, Clemens (1995) Freedom of choice and rational decisions. *Social Choice and Welfare* 12, 137-153.
- Rawls, John (1971) *A Theory of Justice*. Cambridge, Mass.: Harvard University Press.
- Roemer, John E. (1985) Equality of Talent. *Economics and Philosophy* 1, 151-188.
- Samuelson, Paul A. (1938) A Note on the Pure Theory of Consumer's Behaviour. *Economica* 5, 61-71.
- Savage, Leonard (1954) *The Foundations of Statistics*. New York: Wiley.
- Scanlon, Thomas M. (1991) The moral basis of interpersonal comparisons. in: Elster, Jon/ Roemer, John E. (eds., 1991) *Interpersonal Comparisons of Well-Being*. Cambridge: Cambridge University Press. 17-44.
- Sen, Amartya K. (1970) *Collective Choice and Social Welfare*. San Francisco: Holden Day.
- Sen, Amartya (1970a) The Impossibility of a Paretian Liberal. *Journal of Political Economy* 78, 152-157.
- Sen, Amartya (1979) Utilitarianism and Welfarism. *The Journal of Philosophy* 76, 463-489.
- Sen, Amartya (1982) Rights and Agency. *Philosophy and Public Affairs* 11, 3-39.
- Sen, Amartya (1985) *Commodities and Capabilities*. Amsterdam: North Holland.
- Sen, Amartya (1985a) Well-Being, Agency and Freedom. The Dewey Lectures 1984. *Journal of Philosophy* 82, 169-221.
- Sen, Amartya (1988) Freedom of Choice. Concept and Content. *European Economic Review* 32, 269-294.
- Sen, Amartya (1991) Welfare, Preference and Freedom. *Journal of Econometrics* 50, 15-29.
- Sen, Amartya/Williams, Bernard (eds., 1982) *Utilitarianism and beyond*. Cambridge: Cambridge University Press.
- Suppes, Patrick (1996) The nature and measurement of freedom. *Social Choice and Welfare* 13, 183-200.
- Weikard, Hans-Peter (1993) Book review of *Equity and Choice* by Julian Le Grand. In: *Journal of Economics* 57, 117-119.
- World Commission on Environment and Development (1987) *Our Common Future - the 'Brundtland Report'*. Oxford: Oxford University Press.
- Wriglesworth, John L. (1985) *Libertarian Conflicts in Social Choice*. Cambridge: Cambridge University Press.

Also published in this series:

Nr. 1	7/95	H.-G. Petersen	Economic Aspects of Agricultural Areas Management and Land/Water Ecotones Conservation
Nr. 2	7/95	H.-G. Petersen	Pros and Cons of a Negative Income Tax
Nr. 3	7/95	C. Sowada	Haushaltspolitische Konsequenzen steigender Staatsverschuldung in Polen
Nr. 4	8/95	C. Bork	Die Elektrizitätswirtschaft in der Bundesrepublik Deutschland - Das Tarifpreisgenehmigungsverfahren und seine Auswirkungen auf eine potentielle Netzübernahme nach Ablauf von Konzessionsverträgen
Nr. 5	10/95	H.-G. Petersen	Transformation Process After Five Years: Behavioral Adaptation and Institutional Change - The Polish Case
Nr. 6	11/95	C. Bork K. Müller H.-G. Petersen S. Wirths	Wider den Sachzeitwert - Untersuchung zur Frage des angemessenen Übernahmeprices von Elektrizitätsversorgungsnetzen
Nr. 7	1/96	C. Sowada	Sozialpolitik im Transformationsprozess am Beispiel Polens
Nr. 8	4/96	K. Müller T. Nagel H.-G. Petersen	Ökosteuerreform und Senkung der direkten Abgaben: Zu einer Neugestaltung des deutschen Steuer- und Transfersystems
Nr. 9	6/96	H.-P. Weikard	The Rawlsian Principles of Justice Reconsidered
Nr. 10	9/96	H.-G. Petersen	Effizienz, Gerechtigkeit und der Standort Deutschland
Nr. 11	10/96	H.-P. Weikard	Sustainable Freedom of Choice – A New Concept

Also published in this series:

Nr. 1	7/95	H.-G. Petersen	Economic Aspects of Agricultural Areas Management and Land/Water Ecotones Conservation
Nr. 2	7/95	H.-G. Petersen	Pros and Cons of a Negative Income Tax
Nr. 3	7/95	C. Sowada	Haushaltspolitische Konsequenzen steigender Staatsverschuldung in Polen
Nr. 4	8/95	C. Bork	Die Elektrizitätswirtschaft in der Bundesrepublik Deutschland - Das Tarifpreisgenehmigungsverfahren und seine Auswirkungen auf eine potentielle Netzübernahme nach Ablauf von Konzessionsverträgen
Nr. 5	10/95	H.-G. Petersen	Transformation Process After Five Years: Behavioral Adaptation and Institutional Change - The Polish Case
Nr. 6	11/95	C. Bork K. Müller H.-G. Petersen S. Wirths	Wider den Sachzeitwert - Untersuchung zur Frage des angemessenen Übernahme-preises von Elektrizitätsversorgungsnetzen
Nr. 7	1/96	C. Sowada	Sozialpolitik im Transformationsprozess am Beispiel Polens
Nr. 8	4/96	K. Müller T. Nagel H.-G. Petersen	Ökosteuerreform und Senkung der direkten Abgaben: Zu einer Neugestaltung des deutschen Steuer- und Transfersystems
Nr. 9	6/96	H.-P. Weikard	The Rawlsian Principles of Justice Reconsidered
Nr. 10	9/96	H.-G. Petersen	Effizienz, Gerechtigkeit und der Standort Deutschland
Nr. 11	10/96	H.-P. Weikard	Sustainable Freedom of Choice – A New Concept