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Sonderforschungsbereich 178 "Internationalisierung der Wirtschaft"

Diskussionsbeiträge



Juristische Fakultät Fakultät für Wirtschaftswissenschaften und Statistik

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The Illusion of Intergenerational Preference Aggregation: Limits of Individualistic Population Ethics



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Limits of Individualistic Population Ethics

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The Illusion of Intergenerational Preference Aggregation: Limits of Individualistic Population Ethics^{*}

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Abstract

In this paper we analyse the possibility to construct intergenerational criteria of choice within the framework of methodological individualism. The main result of this analysis is, that intergenerational criteria as an aggregation of preferences of current and future individuals do not exist. The extension of social choice theory to intergenerational problems necessarily leads to criteria that are intragenerational in nature. This fact is due to the epistemological difference between actual and potential individuals. The consequences for the structure of welfare functionals in presence of intergenerational choice are analysed.

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1 Introduction

Population ethics and population economics try to delevop and employ rational criteria to evaluate the various problems of intergenerational choice and endogenous fertility. The perhaps most influential direction of thought in economics and practical philosophy formulates these questions within the paradigm of methodological individualism. We ask for the conditions of possibility to construct intergenerational criteria of choice within the framework of methodological individualism. The main result of this analysis is the impossibility to construct an intergenerational criterion in the sense of the word used in the literature. The extension of social choice theory to intergenerational problems necessarily leads to criteria that are intragenerational in nature. This fact is due to the epistemological difference between actual and potential individuals. This impossibility is not restricted to problems of endogenous population but present in all models of intergenerational choice.

So far in the literature, a great deal of attention was spent to derive axiomatic formulations of utilitarism and its consequences.¹ In all these attempts, the possibility to extend social-choice theory to the analysis of population ethics or economics was simply assumed. An intergenerational criterion is, in this view, the extension of an intragenerational criterion to future generations. If future generations are affected in an economic problem of, lets say savings and capital accumulation, the normative criterion should include their preferences or utility functions.

Some authors like Dasgupta (1988, 1993) or Warren (1978) point out the fundamental difference between actual current and potential future individuals. Both authors draw an *ethical* conclusion out of this asymmetry. Dasgupta (1993) indicates the epistemological implication of this asymmetry (p. 383-384): "It makes no sense to attribute a degree of well-being, low, high or nil, to the 'state of not being born'. Non-existence is like nothing for us, not even a very long night, because there is no us to imagine upon. ... It is actual persons who have feelings, aspirations, needs, claims, projects, and a sense of justice.

¹See Blackorby, Bossert and Donaldson (1995), Blackorby and Donaldson (1984), Bossert (1989), Hammond (1988) for the axiomatic treatment and Narveson (1973), Parfit (1982), Razin and Sadka (1995) for an analysis of the consequences.

In short, it is actual persons who are moral agents." His main consequence out of this, however, remains purely ethical.

The paper proceeds as follows: In section 2 we develop the framework of the analysis. In section 3 we analyse the epistemological consequences of the methodological individualism for normative population theory. In section 4 we discuss the possibilities for a normative theory of population within the paradigm of methodological individualism. The concept of an ethical restriction is derived. Sections 5 and 6 discuss the consequences of our findings for the existing approaches of population ethics. Section 7 concludes.

2 Social Choice and Intergenerational Problems

In order to clarify definitions and conclusions, we will introduce a formal model of deterministic population development. We use a discrete time struture t = 0, 1, 2, ... with t = 0 as our present period and each generation living for exactly one period of time. For every period t there exist sets of hypothetical individuals I_t and alternatives A_t .²

The finite set $\widehat{X}_t(.)$ of individuals living at the beginning of period t and the set $P_t(.)$ of alternatives actually available to them (policies) will generally depend on the history of the society. Formally, $\widehat{X}_t(.)$ and $P_t(.)$ are defined by functions $\widehat{X}_t : A_0 \times A_1 \times ... \times A_{t-1} \longrightarrow \mathcal{P}(I_t)$ and $P_t : A_0 \times A_1 \times ... \times A_{t-1} \longrightarrow$ $\mathcal{P}(A_t)$ where $\mathcal{P}(x)$ as usual denotes the set of subsets of a set x and \widehat{X}_0 , P_0 are interpreted as constants. We assume

- "anthropocentry": $\forall t \forall a \in A_0 \times ... \times A_{t-1} : P_t(a) \neq \emptyset \iff \widehat{X}_t(a) \neq \emptyset.$
- "deterministic causality": $\forall t \ge 1 \quad \forall (a_0, ..., a_{t-1}) \in A_0 \times ... \times A_{t-1}$: $P_t(a_0, ..., a_{t-1}) \neq \emptyset \Rightarrow \quad \forall 1 \le s \le t \quad a_s \in P_s(a_0, ..., a_{s-1}).$

The first assumption is a consequence of methodological individualism. This concept requires that alternatives must be derived from the elementary concept of an individual.

² "Living exactly for one period" means $I_s \cap I_t = \emptyset$ for $s \neq t$.

The decision that has to be made in the middle of period t may have an influence on the set $X_t(.)$ of individuals living at the end of period t. Formally $X_t(.)$ is given by a function $X_t : A_0 \times ... \times A_{t-1} \times A_t \longrightarrow \mathcal{P}(I_t)$ such that $X_t(a, a_t) \subset \widehat{X}_t(a)$ holds for every $a \in A_0 \times A_1 \times ... \times A_{t-1}$ and $a_t \in A_t$.

In order to be able to talk about current and future generations in sufficient precision, we will now introduce the notions of actual and potential individuals and the notion of a person.

The set of individuals is divided in *actual* and *potential* individuals. An actual individual is a human being currently alive. Formally, actual individuals at the beginning of the base-period t = 0 are given by \hat{X}_0 .

A potential individual is a human entity³ that may be born in the future. The set of potential individuals for period $t \ge 1$ is defined by $\widehat{X}_t := \bigcup \{\widehat{X}_t(a) \mid a \in A_0 \times ... \times A_{t-1}\}$.

Furthermore, the set of potential individuals is divided in *actual potential* and *hypothetical potential* individuals.

If a vector $p = (p_0, ..., p_{T-1}) \in A_0 \times ... \times A_{T-1}$ of policies is planned as current and future decision, then for every period $t \in \{1, ..., T\}$ exactly the individuals in $\widehat{X}_t(p_0, ..., p_{t-1})$ will be born in period t. Because of this we call $\widehat{X}_t(p)$ the set of actual potential individuals in period t with respect to p.

A hypothetical potential individual in period t is a potential individual who will not be born given the policy p, i.e. an element of $X_t^h(p) := X_t \setminus \hat{X}_t(p)$.

Every individual that is the carrier of ethical rights will be called a *person*.⁴ Therefore, the same classification system can be applied to persons in the same way as it was applied to individuals.

With these definitions we are now ready to discuss the applicability of the theory of public choice to intergenerational problems.

³We distinguish human being and human entity to respect the different epistemological status of individuals currently alive (human beings) and individuals not currently existing outside the imagination of the individuals currently alive (human entities).

⁴The significance of this distinction will become clear when we will talk about the moral status of genesis problems (Dasgupta 1993) in section 6.

3 The Definition of Welfare Functionals

The generally accepted methodological framework for normative population theory is the theory of social choice. Whether one strand of the literature gives an axiomatic derivation of social-choice functions (for example Blackorby and Donaldson (1984) or Bossert (1989)), another strand demonstrates the weakness of utilitarism (Razin and Sadka (1995) as a recent example) or a third one criticises the first two for their analysis of normative population theory as a genesis problem⁵ (Dasgupta (1993)), they all accept implicitely this methodological basis.

It is therefore possible, and in fact crucial, to discuss the appropriateness of this theory for the analysis of population problems.

The theory of social choice was developed to analyse the following question: Assume there is a fixed, finite set of individuals each of them having preferences on a fixed set of alternatives. How can these individual preferences be aggregated to a "collective" ranking of alternatives? The most influential answer on this question was given by Arrow (1951) with his famous (im)possibility theorem.

The focus of this paper is not so much on the various formulations of the theorem or on the possible ways out of the dilemma, it is, however, whether the framework of analysis is on principle applicable to problems of intergenerational choice.

In order to answer this question we apply the information-theoretical method used by Sen (1977) to classify collective-choice rules. His question may be restated in the following way: How much information would be needed by a planning board in order to use some sort of welfare function? The focus of his analysis is on the measurability and interpersonal comparability of individual preferences. Individual preferences are assumed to *exist* and to be *well-defined*, a straightforward assumption for problems of static choice, or in our terminology, problems where only actual individuals are involved. These assumptions, however, summarize the main difference to problems of intergenerational choice.

⁵In genesis problems, all individuals are treated as being potential.

Normative criteria for intergenerational choice generate two additional dimensions of problems in welfaristic⁶ models:

- 1. The epistemological status of human entities may change due to a change of alternatives. The set of individuals may differ for different policies.
- 2. The knowledge of the preference ordering of potential individuals is impossible on principle.

The first problem concerns the domain of the welfare functional. This set may change due to changes in policy. The concept of public choice is not welldefined for problems of endogenous or variable populations⁷. One way out of this problem is to leave the ordinal framework and to assume some degree of measurability and interpersonal comparability as it is done in Blackorby Donaldson (1984) or Bossert (1989). In their analysis they assume the existence of some level of subsistence specifying a state of indifference between being born and not being born. This procedure makes their models tractable from a formal point of view and may, for some persons, have intuitive moral appeal. It neglects, however, the second dimension of the problem.

Even if the the domain of the social welfare functional is the same for all alternatives, there is a qualitative difference between the aggregation of preference orderings of actual individuals and the aggregation of "preferences" of potential individuals. Whereas for the first type of problem an individual preference ordering exists and can, at least on principle, be observed in the process of collective decision making, this is not the case for the second type of problems. The problem is not the quantitative reconstruction of an existing ordering, but the qualitative one that this order does not exist outside the imagination of *actual* individuals. Therefore, even in the case of exogenous

⁶This terminology is due to Sen (1987). Welfarism is the part of methodological individualism where only information about individual preference orderings are used for the collective evaluation of alternatives.

⁷The future population is exogenous and fixed if it does not change due to changes in policy. It is exogenous and variable if population paths may be subject to collective choice (for example Samuelson (1975). It is endogenous if children are a choice variable of their parents (for example Becker (1960)).

generations where the number and identities of future individuals are unaffected by the choice of alternatives, the concept of collective choice can not be extended to the analysis of intergenerational problems.

This result is purely logical in nature. Because preference orderings of actual and of potential individuals are objects with different epistemological status, it is impossible to apply the conventional framework to these problems.

One may ask whether this argument is due to the welfaristic interpretation of methodological individualism⁸. One way to avoid the dilemma would be to have recours to individualistic but on principle observable indices, for example per-capita income. This was done by Bossert (1989) who writes in the case of perfectly measurable and interpersonally comparable preferences: "For convenience, we will choose the interpretation of y as an income vector,..., bearing in mind that other interpretations are possible as well. [...] We might also think of y being a vector of individual utilities,... ". This, however, requires a positive correlation between the index and individual needs. Therefore, this index can be seen as one specific numerical representant of the individual ordering. The point is not so much to find a good representant⁹ for the individual well-being. It is rather that we are necessarily back at our old problem of measurement of potential individuals' preferences. The methodological individualism gives us no room for considerations not related to personal values. This fact must lead to the conclusion that procedures of social choice can not be carried over to the analysis of intergenerational problems. Methodological individualism requires the reference to mental attitudes of *individuals* (for example measured by a preference ordering). But there is no such thing as a mental attitude of a potential individual. Therefore, we are not able to talk about intergenera-

⁸The paradigm of methodological individualism was first mentioned by the Austrian school of economics. Its most prominent advocates have been, for example, Hayek (1967), Menger (1968-70), Popper (1960), Schumpeter (1963) and M. Weber (1968). The epistemological premise of this paradigm is that only individuals exist, alternatively that society only exists as an interpretation of individual behavior. Therefore, according to Popper, every scientific explanation should be due to individual attitudes. For the evolution of this concept see Heine (1983).

⁹And a conventional definition of personal income would be a pretty bad one in the context of population policies because, as most people would feel, for example environmental externalities play a major role for the well-being of future generations.

tional welfare in the same way as we can talk about intragenerational welfare and as it is suggested in the literature. Every apparently *inter*generational criterion must therefore in fact be an *intra*generational criterion. The welfareconsiderations concerning potential individuals have to reflect the ethical ideas of the current generation.

We want to clarify this point by discussing the (sum) utilitarian collectivechoice rule for an intertemporal but fixed population problem. It states that policy p should be preferred to policy \tilde{p} if and only if the sum of individual utilities for alternative p is larger than the sum of individual utilities for alternative \tilde{p} . Let \succ be the collective strict preference, $p \succ \tilde{p} \Leftrightarrow \sum_{j=1}^{N} u_j(p) > \sum_{j=1}^{N} u_j(\tilde{p})$. Now let j = 1 be the (only) actual individual and j = 2, ..., N be the future generation (we use this normalisation to focus on the intergenerational point of the problem). How can this sum be interpreted? As preferences of potential persons do not yet exist, they can only be assumed by the current individual. Therefore it must be that individual 1 has the expectation that the potential generations are going to have preferences according to the utility functions $u_2, ..., u_N$. But because paternalistic restrictions are not conform with methodological individualism¹⁰, this implies a current individuals' utility function of the utilitarian type. If the moral considerations and the cultural background of an individual, and therefore its considerations about future generations, is represented in its preferences, the intergenerational criterion will be an exact mirror of this. The intergenerational problem of preference aggregation must in fact be an intragenerational problem of the current generation. An equivalent formulation of the above criterion is thus $p \succ \tilde{p} \Leftrightarrow \hat{u}_1(p) > \hat{u}_1(\tilde{p})$ where \hat{u} represents the utility function of individual 1 that takes future considerations into account.

So far we did not say that the individual considerations are "sufficient" to take care of future generations' interests (the denial of this statement would reflect the fundamental basis of moral theories - the lack of sympathy together with scarce resources creates the necessity of moral philosophy¹¹), we did say, however, that as long as we stick to the commonly accepted methodology,

¹⁰We will come back to the relation of paternalistic restrictions and individualistic values in the next section. See also Dworkin (1983) for an opposing view.

¹¹Mackie (1977).

the problem of social choice is not well defined because *potential* individuals' preferences or some individualistic indices are needed, but they do not exist outside the imagination of *actual* individuals. The only way to avoid this problem is to restrict attention to the aggregation of these folks' preferences. Therefore, the problem of finding an intergenerational welfare functional is necessarily reduced to the well-known problem of finding an intragenerational welfare functional welfare functional.

4 Individual Ethical Preferences

In the previous section we have argued that the problem of social choice must restrict attention to the construction of decision rules on the preferences of the generation currently alive. If this conclusion would imply that the rights of future generations can not be violated by definition, the methodolgical premise would have to be refuted due to inadequacy.

The answer to this objection can be twofold. First, one could argue, as in all static problems of choice, the process of decision making may be inefficient. Therefore, even an individual with, for example, utilitarian preferences may be kept in a prisoner's dilemma leading to allocations for which the interests of future generations (as the individual feels obliged to) are distorted.

Second, the preferences according to which daily decisions are made may differ from the preferences that respect the interests of future generations ("meta"-preferences). The attribution of decisions to "ethical" preferences or "individual" welfare functions was first mentioned by Arrow (1951) and systematically applied by Harsanyi (1955) and Sen (1974).

We will follow this latter approach in order to give an individualistic foundation of ethical rules. The class of preferences can be defined by specification of its domain. As before, let \hat{X}_0 be the actual population and P_0 the set of policies. For convenience we write $X := \{1, ..., N\}$ instead of \hat{X}_0 and P instead of P_0 . We assume that a policy $p \in P$ "consists" of the following dimensions:

- A consumption-bundle $p^n \in \mathbf{R}^L_+$ for every individual $n \in X$.
- An element \bar{p} of a set \bar{P} representing procedural, future and other aspects of p.

Thus, P is a subset of $(\mathbf{R}^{L}_{+})^{N} \times \overline{P}$. We are now able to distinguish between three types of preference orderings for every individual $n \in X$:

- First-order or egoistic (economic) preference orderings ≥ⁿ on the set R^L₊ of consumption bundles that lead to a preference ordering Rⁿ on P via
 ∀ p, p̃ ∈ P : pRⁿp̃ :⇔ pⁿ ≥ⁿ p̃ⁿ.
- Second-order preference orderings:
 - Social preference orderings on the set P.
 - For every N-tupel <u>R</u> of social preference orderings an *ethical* preference ordering $R_{\underline{R}}$ on P.¹²

While first-order preferences are defined as in most microeconomic models on the consumption bundle of an individual, social preferences may take into account the whole alternative. Not only the evaluation of the own consumption bundle but also considerations about the distribution of goods may be covered with this formulation. Ethical preferences evaluate the alternatives together with the social preferences of all actual individuals.

This conceptual distinction of preferences has the particular advantage that it corresponds to a system of moral categories used in practical philosophy¹³. Three steps of universalization of moral statements are used:

- 1. First degree of universalization: Differences in moral treatment must be due to qualitative differences between individuals (irrelevance of numerical differences).
- 2. Second degree of universalization: Moral considerations ask for the evaluation of other individuals' situations according to ones' own preferences.
- 3. Third degree of universalization: Moral considerations ask for the evaluation of other individuals' situations according the other individuals' preferences.

¹²This is equivalent to an *individual* social welfare functional on the set P of alternatives. ¹³Mackie (1977).

Social and ethical preferences correspond to the concept of second and third degree of universalization of moral statements. These ethical categories give a better understanding of the conclusion derived in section (3). Moral opinions concerning intergenerational problems cannot fall into the category of thirddegree universalization. Therefore, the status of any moral theory concerning future generations remains restricted to the second degree of universalization. As for social-choice functions, ethical preferences are not well-defined for intergenerational problems because they can only contain the individual idea of future generations' preferences.

We want to come back now to the derivation of ethical values within the framework of methodological individualism. If a collective-choice rule is defined on the second-order preferences of individuals, ethical considerations that may be imposed without being paternalistic are already included into the considerations of the individuals.¹⁴ It is therefore not only impossible, but also unnecessary to impose further restrictions.¹⁵ Unfortunately, "real-life" collective-choice rules must be defined on first-order preferences neglecting ethical considerations. Therefore, a collective-choice rule defined on first-order preferences may give rise to a different ordering than a collective-choice rule defined on second order preferences. Ethical values can be imposed as restrictions on the process of social choice for first-order preferences. The restrictions can be defined in a way as to minimize an adequately defined distance between both orderings. It should be emphazised that these restrictions are not paternalistic and fully compatible with methodological individualism.

¹⁵The assumption of an unresricted domain of the Arrow theorem has an interesting interpretation in the context of ethical preferences. If every individual ethical position is respected within a society, the possibility to aggregate individual to a collective ethics is restricted by the Arrow theorem.

¹⁴In the context of ethical preferences, the ability to measure and compare utilities is no longer a question of information, but a question of common ethical values. If everybody agrees that utility should be measured and compared on some scale, a collective decision rule can be implemented that builds on this information. Problems of moral hazard concerning first-degree preferences are neglected in this argument.

5 Conclusions for Normative Intergenerational Criteria

The consequences of the above arguments are twofold. The first one affects the interpretation of commonly used intergenerational criteria. The second one is relevant for the construction of social choice rules.

We will discuss the consequences for common criteria first. In order to make the point as clearly as possible we will without loss of generality assume that there is only one *actual* individual in the following. The aggregation of heterogenous actual preferences is of minor importance here. The most prominent criteria in economic models and also in practical philosophy are:

- the intergenerational Pareto criterion
- the utilitarian criterion
- the Rawlsian maxi-min rule
- the ideal-participant method¹⁶

The Pareto criterion is used to analyse fixed-population problems whereas the others are also applied to problems of variable population size. Especially the (weak) Pareto criterion is broadly accepted in economics as a (minimum) guiding line for policy change. We should prefer an alternative if everybody is better off by choosing this alternative. The criterion gives a guiding line for situations without conflict of interests. This normative significance gets lost in intergenerational models because the rule is no longer *inter*personal but reflects the ethical considerations of a *single* (actual) person. The Pareto criterion is not more than the representation of the individuals' second-order preferences and may be in conflict with other individual preference orderings. The same argument holds for the other criteria. None of them is interpersonal, but reflects solely the ethical considerations of an actual individual. The discussion of weaknesses of these criteria is therefore somewhat misleading. Take Parfits'

¹⁶Cowen (1989).

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repugnant conclusion as an example. One of his objections against (sum) utilitarism is the fact that the sum of utilities may be increased by simply increasing the population, whereas at the same time, individual consumption falls towards zero. One may agree that this conclusion is in fact repugnant if utilitiarism is the social choice rule. This view is misleading because intergenerational utilitarism can be at most the ethical consideration of a single individual. These preferences cannot be criticized without being paternalistic. If the second-order preferences of the individuals are utilitarian, we have no other possibility but to accept this. There may be an intragenerational conflict of interests, nevertheless, this divergence of preferences is in no way different from the conflict of interests in static problems.

It may be helpful to adopt the distinction between rule of action and motive of action due to J.S. Mill. The individual motive of action (may it be utilitarian, Paretian, Kantian or whatever) determines its preference ordering which must be taken exogenously within the methodological individualism. The collective rule, however, is the the outcome of social choice. But this rule must necessarily be defined as an intragenerational problem respecting individual orderings.

This remark leads us directly to the second consequence, the construction of social-choice rules on the domain of actual individuals' first-order preference orderings. As we argued above, ethical values are reflected in the individual second-order ranking of alternatives. This construction was used by Harsanyi (1955). He argued that if there is a set of commonly acceptable ethical values within a society, these rules may induce a certain structure on the individuals' second-order orderings (in his particular example all ethical preferences must be utilitarian if two ethical axioms are commonly accepted). These commonly accepted ethical rules may now act as restrictions for the problem of social choice defined on first-order preferences (for his example again, also the collective choice rule must be utilitarian).¹⁷

¹⁷It is important to note that the structure of the procedure is unaffected by the anchorage of ethical values. Both, individualistic and objectivistic positions will lead to the same consequences, the implementation of restrictions. Both foundations differ only in the establishment of restrictions. Whereas from a subjectivistic point of view, ethical preferences are such that some restrictions will be commonly accepted, the objectivistic point of view would require that second-order preferences must have a certain structure given the knowledge of a certain ethical value. A Platonian or Kantian individual would even change its first-order

This procedure may now be used for the construction of a welfare functional for intergenerational problems. The main issue is to isolate some commonly accepted ethical values concerning future generations and to use them as restrictions in the process of intragenerational preference aggregation. Unfortunately these ethical constraints cannot be quantitatively deduced in a rigoros way at this level of abstraction.

6 Classification of the Literature

What is the role for population ethics if one sticks to the assumption of methodological individualism? The first one is - in the broadest sense - empirical. The ethical values common to each member of an actual society have to be identified. The second one is to derive rules of choice from these criteria.

Under what category shall we classify the contributions of authors trying to recommend one criterion and rejecting another? Let us discuss three examples.

Sikora (1978) adopts the view that "it is prima facie wrong to prevent the existence of anyone with reasonable prospects of happiness". OBLIGATION THEORIES of this kind contain a strong obligation to future generations. The perhaps most pronounced version is summarized in the POTENTIALITY PRIN-CIPLE: "It is morally wrong, other things being equal, to prevent potential people from being actual." (Hare 1975)

Parfit (1976, 1982, 1984) takes a view with potentially opposite consequences. He calls the property of certain formulations of utilitarism to generate very large populations with very low standards of living the REPUGNANT CONCLUSION. A larger population is, according to this view, only welfare increasing, if the additional population has a reasonable level of well-being.

Dasgupta (1988, 1993) criticizes the utilitarian approach¹⁸ and Parfits critique for posing the wrong question. His assertion is that dealing with exclusively potential individuals generates apparent questions that are not able to

preferences after the finding of an ethical value, and therefore there is no need for any restriction at all in a purely Platonian or Kantian society. On the other hand, restrictions would not distort the social choice if they correspond to these values.

¹⁸For an axiomatic treatment of utilitarism see Blackorby and Donaldson (1984), Bossert (1989) and Hammond (1988).

help us understanding the real problems of population ethics. Furthermore, Dasgupta argues that there is a moral asymmetry between the death of an actual individual and the non-creation of a potential one.

So far we have argued that there is a difference between the motive and the rule of action and that intergenerational considerations are necessarily concerned with the motive of choice, or in other words, the individual preferences and the ethical restrictions that might be generated from them. But both, preferences and restrictions must be exogenous for the analysis. Therefore, statements like the ones cited above must be the expression of individual ethical preferences. The intention of these statements must therefore be either to help other people in their attempt to calculate their ordering of alternatives, or to convince them that the own moral opinion is the "better" one. In this view, for example utilitarism is nothing else than the name for the group of people with utilitarian preferences.

This point can be made more explicit if we ask for the common element of all three opinions. An obvious criterion is the assignment of rights to potential individuals in the preferences of an actual individual.

If all, actual and potential, individuals have the same rights, it must be completely irrelevant whether an actual individual dies or a potential individual will not be born. From this point of view, the genesis problem can not be evaluated from a practical point of view but represents a specific ethical opinion concerning potential individuals. Also the epistemological objection that there is a difference between actual and potential individuals is irrelevant because we are in the sphere of motives. An individual may act fully rational if it is willing to spend a lot of money to prepare for the arrival of extraterrestrial beings despite the fact that these entities have a different epistemological status than human beings because it acts in accordance with its preferences.

Hare's position implies a lexicografic relationship between the right to live and the quality of life. His position can therefore be described as a genesis problem with a specific structure of rights. None of the above authors, however, explicitly differentiates between actual potential individuals and hypothetical potential individuals. The position perhaps closest to this is the one held by Dasgupta. If you differentiate in a way such that only actual potential individuals have moral rights, you get an asymmetry in your ordering: Contraception or abstinence would be ethically neutral whereas procreation leads to a certain obligation to this new life.

We could continue the assignment of right for a while. The main point here is that, as long as one argues within the framework defined by methodological individualism, neither of these opinions can be right or wrong in an epistemological meaning of the word. The choice of this paradigm is, however, not free of ethical suppositions. The idea of defining a decision rule on the domain of individual preferences respects fundamental principles of liberalism. In this respect, the necessity to begin somewhere with the analysis creates a self-referring system.

7 Summary

The attempt to generalize the method of social choice in order to analyze intergenerational problems is severely limited due to the fact that there are no preferences of future (unborn) generations that could be aggregated. The nonexistence of future preferences necessarily leads to the conclusion that every decision rule who attempts to be based on the interests of potential individuals has in fact to be based on the imagination of actual people about the interests of the future generations. This implies that any concern about future generations must be included in the individual orderings of actual people. The argument differs from the ones found in the literature. Discussing Rawls's theory of intergenerational justice, Dasgupta (1993, p. 378) writes that "a number of authors have expressed the thought that, external effects aside, population and savings decisions don't involve social ethics. They have argued that considerate parents take into account the well-being of their children when choosing their familiy size and deciding how much to save.", and a little bit later "It is a theory concerning how generations might be expected to save, not about how they ought to save". Our point is not that there is no need for population ethics, but that it is *impossible* to respect the interests of future generations in the same way as one is are able to respect the interests of individuals currently alive.

The consequences are twofold: First, the problem to construct an intertemporal decision rule is in fact a problem of intragenerational preference aggregation. Second, criteria like the utilitarian, paretian or rawlsian decision rules have a weaker normative implication as generally assumed. They may either correspond to the individual preferences concerning future generations or they can be defined on the set of actual individuals. In the latter case, the ethical considerations implicit in the decision rule are purely intragenerational.

This finding does, however, not imply that the interests of future generations cannot be misrepresented in the intratemporal decision process. First, externalities may lead to a distorted decision. This distortion is, however, in no way different from standard externalities in static models. Second, the interests of potential individuals may only be represented in meta-preferences or ethical preferences of the current generation. A social-choice rule based on economic preferences according to which day-by-day decisions are calculated may therefore misrepresent the interests of future generations as they are anchored within the ethical preferences of the current generation. This consideration allows us to characterize a method to construct a process of decision making in intergenerational problems: Commonly accepted ethical principles may be defined that act as constraints in the process of preference aggregation. These constraints are calculated in order to minimize the difference in decision-making between first- and second order preferences. This procedure, again, can as well be applied for static problems of choice. It is the type of ethical constraints they reflect the ethical considerations about future generations – that makes the problem intergenerational.

8 References

Arrow, K. (1951): Social Choice and Individual Values, New York: John Wiley.

- Becker, G. (1960) : An Economic Analysis of Fertility in: Easterlin, R.A. (Ed..): Demographic and Economic Change. Princeton: Princeton University Press.
- Blackorby, C. and W. Bossert and D. Donaldson (1995): Intertemporal Population Ethics: Critical-Level Utilitarian Principles, Econometrica 63, 1303-1320.
- Blackorby, C. and D. Donaldson (1984): Social Criteria for Evaluating Population Change, Journal of Public Economics 25, 13-33.
- Bossert, W. (1989): On some Variable Population Size Issues in Welfare Economics, Mathematical Systems in Economics, Athenaeum, Frankfurt a.M..
- Cowen, T. (1989): Normative Population Theory, Social Choice and Welfare 6, 33-43.
- Dasgupta, P. (1988): Lives and Well-Being, Social Choice and Welfare, 5.
- Dasgupta, P. (1993): An inquiry into Well-Being and Destitution, Oxford University Press.
- Dworkin, R. (1983): *Paternalism*, in: T.L. Beauchamp and T.P. Pinkard (Eds.), Ethics and Public Policy, Prentice-Hall, New Jersey.
- Hammond, P. (1988): Consequentalist Demographic Norms and Parenting Rights, Social Choice and Welfare 5, 127-146.
- Hare, R.M. (1963): Freedom and Reason, Oxford.
- Harsanyi, J.C. (1955): Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility, Journal of Political Economy 63, 309-321.
- Hayek, F.A.v. (1967): Studies in Philosophy, Politics and Economics, Chicago, London, Toronto.

- Heine, (1983): Methodologischer Individualimus, Koenighausen + Neumann, Wuerzburg.
- Hurka, T.M. (1982): Average Utilitarism, Analysis 42, 65-69.
- Hurka, T.M. (1983): Value and Population Size, Ethics 93, 496-507.
- Lane, J.S. (1970): On Optimal Population Paths, Lecture Notes in Economics and Mathematical Systems, Springer-Verlag, Berlin, Heidelberg, New York.
- Mackie, J.L. (1977): Ethics. Inventing Right or Wrong, Harmondsworth: Penguin Books.
- Menger, K. (1968-70): Gesammelte Werke, Tuebingen.
- Mishan, E.J. (1977). Economic Criteria for Intergenerational Comparisons, Journal of Economics 37, 281-306.
- Monro, D.H. (1967): Empiricism and Ethics, Cambridge.
- Narveson, J. (1973): Moral Problems of Population, Monist, 57.
- Parfit, D. (1976): On Doing the Best for Our Children, in: M. Bayles (Ed), Ethics and Populations, Cambridge.
- Parfit, D. (1982): Future Generations: Further Problems, Philosophy and Public Affairs 11, 113-172.
- Parfit, D. (1984): Reasons and Persons, Oxford University Press.
- Popper, K. (1965): Das Elend des Historizismus, Tuebingen.
- Rawls, J. (1972): A Theory of Justice, Oxford: Oxford University Press.
- Razin, A. and E. Sadka, (1995): Population Economics, MIT Press, Cambridge, Massachusetts.
- Samuelson, P.A. (1975): The Optimum Growth Rate For Population, International Economic Review 16, 531-538.
- Schumpeter, A. (1908): Das Wesen und der Hauptinhalt der theoretischen Nationaloekonomie, Leipzig.

- Sen, A. (1970): Collective Choice and Social Welfare, North-Holland.
- Sen, A. (1974): Choice, Orderings and Morality, in: S. Koerner (Ed.), Practical Reason, Oxford: Basil Blackwell.
- Sen, A. (1987): On Ethics and Economics, Oxford, Basil Blackwell.
- Sen, A. (1977): On Weights and Measures: Informational Constraints in Social Welfare Analysis, Econometrica 45, 1539-1572.
- Sikora, R.I. (1978): Is it Wrong to Prevent the Existence of Future Generations?, in: R.I. Sikora and B. Barry (Eds.), Obligations to Future Generations, Temple University Press, Philadelphia.
- Sikora, R.I. and B. Barry (1978): *Obligations to Future Generations*, Temple University Press, Philadelphia.
- Warren, M. (1978): Do Potential People have Moral Rights?, in: R.I. Sikora and B. Barry (Eds.), Obligations to Future Generations, Temple University Press, Philadelphia.

Weber, M. (1968): Gesammelte Aufsaetze zur Wissenschaftslehre, Tuebingen.