

LOCAL DECISIONS GLOBAL RIGHTS

ALPER NAKKAŞ

103622009

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PROF. DR. M. REMZİ SANVER

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Local Decisions Global Rights
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Alper NAKKAŞ
103622009

Prof. Dr. M. Remzi SANVER :
Doç. Dr. İpek Özkal-SANVER :
Yrd. Doç. Dr. Göksel AŞAN :

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Abstract

Not surprisingly, freedom is one of the central concepts in moral and political philosophy. After Amartya Sen's celebrated work "The Impossibility of A Paretian Liberal", a massive literature emerged over the last three decades. This study mainly describes how various authors contributed to this literature and tries to incorporate the importance of "description" in individual oriented problems of Social Choice Theory.

Özetçe

Özgürlük kavramı yıllar boyunca ahlaki ve politik felsefenin önemli bir ilgi alanı olmuştur. Amartya Sen'in "The Impossibility of A Paretian Liberal" makalesiyle birlikte bu alanda pek çok çalışma hızla ortaya çıkmıştır. Bu çalışma temel olarak "özgürlük" hakkındaki makaleleri özetlemek ve Sosyal Seçim Teorisi içinde "tanımlama"nın önemini vurgulamak için yazılmıştır.

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Alper Nakkaş

Istanbul Bilgi University

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Abstract

Not surprisingly, freedom is one of the central concepts in moral and political philosophy. After Amartya Sen's celebrated work "The Impossibility of A Paretian Liberal", a massive literature emerged over the last three decades. This study mainly describes how various authors contributed to this literature and tries to incorporate the importance of "*description*" in individual oriented problems of Social Choice Theory.

1. Section I

1.1. Introduction

Not surprisingly, freedom is one of the central concepts in moral and political philosophy. Indeed, among philosophers there have been many debates over the nature and the value of the freedom.¹ Philosophical discussions concerning the nature of freedom revolve around three issues; viz. deciding what kinds of agents, what kinds of constraints and what kinds of objectives should be considered relevant². Or in another words, “Concepts of freedom differ in terms of who can be said to be free, the specification of what the agents are free from, or the views about what the agents are free or not-free to do or be or become”³. Standard introductions to the philosophical study of freedom state that there are many different views on what freedom refers to. Gray (1991), for instance, distinguishes at least seven clusters of concepts of freedom: concepts according to which freedom refers to the absence of impediments, the availability of choices, effective power, status, self-determination, doing what one wants, or self-mastery. Martin Van

¹For important post-war contributions, see Hayek 1960; Oppenheim 1961, 1981; MacCallum 1967; Berlin 1969; Rawls 1971; Nozick 1974; Day 1977, 1983; Gewirth 1978, Taylor 1979; Miller 1983; Raz 1986; Hurka 1987; Kymlicka 1989; Swanton 1992; Steiner 1994; Van Parijs 1995; Kristjánsson 1996; Carter 1999; Pettit 1997, 2001; Kramer 2003

²Please see MacCallum (1967)

³Please see Van Hees (2004)

Hees (2004) continues with examples:

“In addition, many further differences concerning the exact definition of freedom can be distinguished within a single cluster. For instance, let freedom refer to the absence of impediments to a person’s behavior. Immediately after, debates in this view center on the exact nature of the constraints or impediments that determine a person’s freedom. Are only “human-imposed” impediments to count as freedom reducing, or do natural or physical constraints also count? Is a violation of a person’s freedom, by humans, always the result of an intentionally imposed constraint, or do unintentionally imposed constraints also limit a person’s freedom? Do only morally inadmissible constraints curtail freedom or do morally acceptable ones do so too?”

Another substantial part of the freedom literature concerns the question of why freedom is valuable. A well-known argument is that freedom has an important instrumental value since it enables us to do what we want; it enables us to realize our preferences better. However it may be possible for some particular cases that freedom may not contribute to the happiness of the “free” individuals. If such a case occurs, does this mean freedom should be restricted? Or, what if one person’s

freedom affects that of another? Is it possible to compare freedom degrees of different individuals? Can we compare the respective values of these freedoms, and if so, how? These are some basic questions of the moral and political philosophy related to freedom.

Although there is not a pure agreement in the literature, it has been accepted that there is a clear dependency between “the nature” and “the value” of freedom. “A position on the nature of freedom affects one’s view on the possible value of freedom; conversely, defenses of conceptions of freedom are often motivated by particular moral presuppositions”⁴. In addition, seeking the nature and the value of freedom brought some other expansions in the literature. “For instance, differences between theories of liberalism can partly be traced back to differences between the implicit assumptions about the nature of freedom. By making these assumptions explicit, the philosophical analysis of freedom has led to a better understanding of the nature of theories of liberalism. Moreover, by subsequently discussing the reasonableness of these assumptions, the philosophical analysis enables us to make a more sophisticated assessment of the quality of conflicting theories of liberalism”⁵.

⁴For details see Gallie (1955/6)

⁵See Van Hees (2004)

An important new approach to the study of freedom has evolved over the last three decades. This approach is formal in nature and has its origin within the realm of rational choice theory, which focuses on the formal analysis of processes of individual and collective decision making, based on certain assumptions concerning the rationality of such decision making. Amartya Sen was the first who took “non-utility information” into account beside the traditional welfare axioms⁶. With respect to the analysis of freedom, two new lines of formal research came out.

The first new line was an examination of how considerations of freedom affect processes of collective decision-making. The main point of departure here is Sen’s theorem of the impossibility of a Paretian liberal ⁷, or, as this result is also known, the liberal paradox. Sen showed that a seemingly mild condition concerning the liberty of individuals is incompatible with the well-known Pareto condition. “This result supposedly established a fundamental tension between the protection of individual freedom and rights on the one hand, and the quest for an optimum level of collective welfare on the other” ⁸.

⁶By saying “non-utility information” we imply the considerations of freedom and equality. For example, “minimal liberalization” condition of Sen is a kind of “non-utility information”. For some of the Sen’s key contributions to the analysis of freedom, see Sen (1970, 1985a, 1985b, 1988, 1990, 1991, 1993, 1999, 2002).

⁷See Sen (1970)

⁸See Van Hees (2004)

Sen's result led to an enormous number of reactions. As with most impossibility results, many of the initial reactions to the theorem consisted either of establishing that the assumptions could be weakened so as to obtain an even stronger impossibility result, or of examining whether there is a defensible weakening of the assumptions that would lead to possibility results.⁹ With respect to the latter question, Sen himself argued that the Pareto condition should be weakened, thereby challenging one of the fundamental assumptions of the welfarist framework used by economists. A different type of reaction was launched by the philosopher Robert Nozick¹⁰, who argued that Sen's approach was fundamentally flawed since it used the wrong formal framework to analyze individual rights and freedom. Sen described rights and freedom within the framework of social choice theory, the part of rational choice theory that studies collective decision mechanisms. However, as Nozick argued, it is more appropriate to understand rights as forming the constraints within which collective decisions are made.

Beside the discussions about fundamental ways of escaping from the liberal paradox, some game-theoretic approaches also emerged since game theory is the part of rational choice theory that models the relationships between the possible

⁹For a review of this early literature, see Wriglesworth (1985).

¹⁰For details see Nozick (1974, p. 166)

actions of individuals.¹¹ Moreover, although the substance of Sen's result - the tension between freedom and Pareto optimality - remained uncontested and was in fact thought to re-emerge in the game-theoretic framework, recent results show that the desiderata may be compatible after all¹². Certain aspects of game theory important here: game theory could explain why agents exercise their rights as they do and, on a higher level of decision making, how the emergence of certain allocations of rights can be explained.¹³

A second issue that was explored by rational choice theorists is the measurement of freedom: determining the degree of freedom that individuals enjoy in terms of the range of choices open to them. To get more information about "measurement of freedom", please look at Steiner (1983), Carter (1999), O'Neill (1980) and Oppenheim (1981, 1995).

The rest of this work is going to be as following: "The Impossibility of A Paretian Liberal" is recalled in the next section. The solution attempts within the context of the Sen's original view are presented in Section III. In Section IV, an alternative model that respects the liberty condition is constructed. Section V

¹¹See Gärdenfors (1981), Deb (1990, 1994), Van Hees (1995, 1999), Deb et al. (1997), Fleurbaey and Gaertner (1997), Gaertner et al. (1998); Peleg (1998), Fleurbaey and Van Hees (2000).

¹²For details please see Van Hees (1999, 2000b)

¹³See, among others, Suppes (1987), Sen (1988, 1990, 1991), Pattanaik and Xu (1990, 1997, 1998), Baird et al. (1994), Pattanaik and Suzumura (1996), Van Hees (1996, 2000a)

Klemisch-Ahlert (1993), Arrow (1995), Puppe (1995, 1996), Van Hees (1998, 2002a).

makes some closing remarks.

2. Section II

2.1. The Impossibility of A Paretian Liberal

Overview The notion that Sen (1970b) tried to pay attention was whether every alternative in a society should be “everyone’s business” or social aggregators should protect some of the alternatives that are related to a particular subset of the society. For example, suppose that there will be an election for the governor of Istanbul. Is this the matter of the people who live in Istanbul or all the citizens of Turkey including Ankara, Trabzon, and Kars.etc? It is very plausible to say that people in Istanbul should elect the governor of the city. But, is this “privilege” compatible with the other desired conditions of social aggregators? This kind of choices lies in what is sometimes referred to as a group’s "protected sphere" (see Hayek, 1960). Such spheres may be taken to be very wide or rather narrow depending on, among other things, our political philosophy, but the existence of some personal protected sphere seems to be widely acknowledged; see, for example, Mill (1859), Hayek (1960) and Gramsci (1971), whose conceptions of liberty differ sharply in other respects. The trailblazing work of Amartya Sen, for

which he received the 1998 Nobel Prize in Economic Science, strikes the tension between the protection of individual freedom and Pareto optimality. The liberal paradox of Sen showed that even a very mild description of liberty of individuals is incompatible with the well-known Pareto condition.

Axioms In Sen's original presentation of the impossibility of a Paretian liberal the collective choice rule was required to satisfy the following three conditions:

CONDITION U (Unrestricted Domain): Every logically possible set of individual orderings is included in the domain of the collective choice rule.¹⁴

Each individual can rank the alternatives in any desired transitive manner. Recall, an individual's ranking is transitive if and only if it obeys the ordering properties of points on the line. For instance, if we prefer football to basketball and basketball to volleyball, then surely we prefer football to volleyball; i.e., the rankings $a \succeq b$ and $b \succeq c$ (meaning, a is at least as good as b, and b is at least as good as c) imply $a \succeq c$.

CONDITION P (Pareto Optimality): If every individual prefers any alternative x to another alternative y , then society must prefer x to y .

¹⁴A collective choice rule is a functional relationship that specifies one and only one social preference relation R for any set of n individual orderings (one ordering for each individual).

CONDITION L (Liberalism): For each individual $i \in N$, there is at least one pair of alternatives, say (x, y) , such that if this individual prefers x to y , then society should prefer x to y , and if this individual prefers y to x , then society should prefer y to x .

Sen illustrates the intended meaning of this condition as following:

“Given other things in the society, if you prefer to have pink walls rather than white, then [the] society should permit you to have this, even if a majority of the community would like to see your walls white. Similarly, whether you should sleep on your back or on your belly is a matter in which the society should permit you absolute freedom, even if a majority of the community is nosey enough to feel that you must sleep on your back.”¹⁵

As Sen (1970b) mentioned, it is possible to weaken the condition of liberalism further. Even though such freedom is considered as a privilege to a proper subset of individuals, it may still very plausible to have a conflict in Sen’s world. To show this minimal type freedom could cause a social conflict with Pareto efficiency, Sen worked with a far weaker condition than Liberalism:

CONDITION L* (Minimal Liberalism): There are at least two indi-

¹⁵For details please see Sen (1970b, 152)

viduals such that for each of them there is at least one pair of alternatives over which he is decisive, that is, there is a pair of x, y , such that if he prefers x to y (respectively y to x), then society should prefer x to y (respectively y to x).

Result According to Sen's construction of collective choice rule and attached meanings of alternatives ensure the following theorem to hold:

Theorem: There is no social decision function that can simultaneously satisfy Conditions U, P, and L.¹⁶

In others words, given the condition of unrestricted domain, Pareto principle and liberalism are incompatible. Since the Pareto principle has seldom been seriously challenged as a reasonable requirement on social welfare judgments, there is no wonder that Sen's impossibility theorem to the effect that there exists no collective choice rule satisfying Sen's minimal liberty as well as the Pareto principle caused a stir. As Sen (1970b, 157) put it in his first paper on the impossibility of a Paretian liberal, "the moral [of this impossibility theorem] is that in a very basic sense liberal values conflict with the Pareto principle. . . . [I]f someone

¹⁶By social decision function Sen defines a collective choice rule which has a restricted range to social preference relations that generate a choice rule. Therefore, "transitivity" condition is not necessary for social decision functions.

does have certain liberal values, then he may have to eschew his adherence to Pareto optimality.” This is a criticism against the welfaristic basis of normative economics indeed.

The original proof of the theorem is as following:

Let the two individuals referred to in Condition L^* be 1 and 2, respectively, and the two pairs of alternatives referred to be (x, y) and (z, w) , respectively. If (x, y) and (z, w) are the same pair of alternatives, then there is a contradiction. They have, therefore, at most one alternative in common, say $x = z$. Assume now that person 1 prefers x to y , and person 2 prefers w to $z (= x)$. And let everyone in the community including 1 and 2 prefer y to w . There is no inconsistency for anyone, not even for 1 and 2, and their respective orderings are: 1 prefers x to y and y to w , while 2 prefers y to w and w to x . By Condition U this should be in the domain of the social decision mechanism. But by Condition L^* , x must be preferred to y , and w must be preferred to $x (= z)$, while by the Pareto principle, y must be preferred to w . Thus, there is no best element in the set $(x = z, y, w)$ in terms of social preference, and every alternative is worse than some other. A choice function for the society does not therefore exist.

Next, let $x, y, z,$ and $w,$ be all distinct. Let 1 prefer x to y and 2 prefer z to w . And let everyone in the community including 1 and 2 prefer w to x and y to

z. There is no contradiction for 1 or 2, for 1 simply prefers w to x, x to y, and y to z, while 2 prefers y to z, z to w, and w to x. By Condition U this configuration of individual preferences must yield a social choice function. But by Condition L* society should prefer x to y and z to w, while by the Pareto principle society must prefer w to x, and y to z. This means that there is no best alternative for this set, and a choice function does not exist for any set that includes these four alternatives. Thus, there is no social decision function satisfying Conditions U, P, and L* and the proof is complete.¹⁷

It may be helpful to illustrate this result by means of the case of Lady Chatterley's Lover (LCL), also due to Sen ¹⁸. There is just one copy of this book and two people, prude Mr. A and lascivious Mr. B. The admissible social states then are:

x = "A reads LCL",

y = "B reads LCL", and

z = "neither of them reads LCL".

The linear ordering of the preferences can (plausibly) be assumed as z over x

¹⁷Sen have a foot note at this point: "We can strengthen this theorem further by weakening Condition L* by demanding only that 1 be decisive for x against y , but not vice versa, and 2 be decisive for z against w , but not vice versa, and require that $x \neq z$, and $y \neq w$. This condition, too, can be shown to be inconsistent with Condition U and P, but the logical gain involved in this extension does not, alas, seem to be associated with any significant increase of relevance."

¹⁸Sen (1970a; 1970b, pp. 80-81)

over y for A, and x over y over z for B. For example, Sen describes the situation as following: “Mr. A, who is a prude, prefers most that no one reads it, but given the choice between either of the two reading it, he would prefer that he read it himself rather than exposing gullible Mr. B to the influences of Lawrence (Prudes, I am told, tend to prefer to be censors rather than being censored.) In decreasing order of preference, his ranking is z, x, y . Mr. B, however, prefers that either of them should read it rather than neither. Furthermore, he takes delight in the thought that prudish Mr. A may have to read Lawrence, and his first preference is that Mr. A should read it, next best that he himself should read it, and worst that neither should. His ranking is, therefore, x, y, z ”. Since reading or not reading should, *ceteris paribus*, be a matter for individual discretion, we can easily justify the assumptions that Mr. A has a right over (x,z) pair and Mr. B has a right over (y,z) in the liberal context. Application of Condition P and Condition L then immediately yields an acyclic social preference order.

This very simple but genius theorem had an enormous effect on the literature both in the social choice and philosophy context. It supposedly established a fundamental tension between the protection of individual freedom and rights on the one hand, and the quest for an optimum level of collective welfare on the other. Sen’s result led to a very high number of reactions in the rational choice theory

manner. As with most impossibility results, many of the initial reactions to the theorem consisted either of establishing that the assumptions could be weakened so as to obtain an even stronger impossibility result, or of examining whether there is a defensible weakening of the assumptions that would lead to possibility results. With respect to the latter question, Sen himself argued that the Pareto condition should be weakened, thereby challenging one of the fundamental assumptions of the welfarist framework used by economists.

3. Section III

3.1. Solution Attempts

"The Impossibility of A Paretian Liberal" followed by the many of related works, e.g. Batra and Pattanaik (1972), Bernholz (1974, 1975), Blau (1975), Blau and Deb (1976), Campbell (1975), Deb (1974), Farrell (1976), Fine (1975), Gibbard (1974), Hammond (1974), Hillinger and Lapham (1971), Karni (1974a, b), Kelly (1976a, b), Ng (1971), Nozick (1973, 1974), Peacock and Rowley (1972), Ramachandra (1972), Rowley and Peacock (1975), Seidl (1975) and Suzumura (1976). While some authors have disputed the existence of the conflict, others have investigated ways of escaping the difficulty, while still others have been con-

cerned with extending this impossibility result to a wider class of social choice problems. We can characterize the solution attempts for the Sen's impossibility result within the two main categories. The first one contains, as stated above, the initial reactions of the paradox to weaken the one of the conditions U, P, L or re-defining the liberalism in such a way that it would give some reasonable possibility result. This work is mainly focus on these types of solution attempts. Other solution attempts outside the original view of Sen's Liberal context, e.g. fuzzy preferences, are not subject of this study.

3.2. Weakening the Conditions Unrestricted Domain (U) and Pareto Optimality (P)

3.2.1. Domain Restrictions

As mentioned above, one way of resolving the conflict is the weakening of Condition U, the "unrestricted domain" ¹⁹. However, the interpretation of a relaxation of Condition U may not be obvious. Sen describes the situation as following ²⁰:

“If a particular configuration of individual preferences is "outside the domain" of a social decision procedure, then nothing can be de-

¹⁹See Sen, 1970a, pp. 85-86; Fine, 1975, and Blau, 1975

²⁰See Sen, 1976

duced from that procedure if such a configuration were to arise. When we "rule out" a preference configuration, that is only a refusal to open our mouth in that case, and obviously has no bearing on whether that configuration will, in fact, arise or not. If such a preference configuration does, in fact, occur, then to say that it is outside the domain of a procedure is merely an admission of defeat as far as that procedure is concerned. The relevance of the investigation of "domain restriction" lays in the light it throws on the type of configurations that would have to be absent. The investigation comes into its own when we move away from the assumption of given individual preferences, and considers the changes that will help to eliminate the conflict. It is in this context that one can remark that "the eventual guarantee for individual freedom" may have to be found "in developing values and preferences that respect each other's privacy and personal choices" (Sen, 1970a, p. 85). This is a "way out" of the dilemma only in this rather limited sense. The belief that "unrestricted domain" is the condition to axe is not uncommon, though the argument on this is rarely spelt out clearly."

Blau (1975) told the story from a different perspective. He pointed out that, in the two-person case, the conflict between the Pareto principle and Condition L

arises only if both persons are *meddlesome* in the sense of having stronger preferences against the other on the other's assigned pair than on his own assigned pair. "That one of them might exhibit such a preference is remarkable enough, but that both should do so seems to border on the socially pathological" ²¹. Sen also accepted this persuasive comment: "Whether pathological is an appropriate description of this type of occurrence I find difficult to decide, but as we saw with several examples (e.g. the Lady Chatterley's Lover case, the "work choice case", the "Angelina-Edwin case"), such preference configurations may not be implausible even over pairs the choices over which are regarded as "purely personal" from the common libertarian point of view. If meddlesomeness is a disease, it is certainly not a rare disease" ²².

Blau showed that the conflict between the Pareto principle and Condition L would not arise in the case of two individuals and four alternatives, if only four of the possible 752 configurations of individual preferences were to be ruled out ²³. If any preference pattern were as likely as any other, this would give it a very low probability of occurrence, even though for a large community there will be a fair number of cases of conflict even under this assumption. But Sen criticizes

²¹See Blau, 1975, p. 396.

²²Please see Sen (1976)

²³See Blau, 1975, p. 398

the equi-probability as a “not very good assumption” so that the interpretation of Blau’s striking result remains a little problematic. According to Sen, Blau was quite right in not basing his "way out" of the inconsistency on the relaxation of the condition of "unrestricted domain", but on weakening the other conditions, specifying what "should" be done if such a meddlesome preference configuration were to arise. But he also adds, it was argued earlier that Blau’s solution was not quite adequate, but their differences there do not lie in the role of the condition of unrestricted domain.

Breyer (1977) proposed to restrict condition U. In order to avoid the liberal paradox, he excluded all preference profiles that contain more than one individual ordering R_i that is not "extremely liberal" (i.e. such that an individual’s personal alternatives are of overwhelming importance for him). But Gaertner and Krüger (1981) criticize this type approaches: “To demand that $n-1$ individuals are extremely liberal is a very severe requirement indeed. As long as such restrictions are dictated by the purpose they are to serve (viz., to reconcile Paretian and libertarian principles) but have no independent justification (say, owing to empirical findings that some preference profiles are not expected to occur), it seems to us that Sen is right in saying that domain restrictions are something like an

"admission of defeat"²⁴."

It is very clear that no settlement has been agreed on the domain restrictions of the liberal paradox in the literature. Moreover, we can easily say that many economic theorists still look doubtfully to some kind of domain restrictions (like the restrictions which only purposes to solve the well-known impossibility results).

3.2.2. Condition P: Re-Defining Pareto Condition in the Liberal Context

One of the central conditions of the social choice theory is obviously Pareto principle. In fact, the importance of Pareto principle stressed, by many authors, in different works. In addition, many papers also discussed the demands of this weak condition. General view in the literature stands against to the attempts that try to weaken the Pareto condition. For example Sen indicates "the suggestion that the Pareto principle be rejected meets with resistance, which is perfectly understandable, since there is something very central in the idea that preferences unanimously held by members of a community cannot be rejected by that community"²⁵. Also, as Blau puts it, "I can see no case for an outside observer denying a unanimous

²⁴See Sen (1976, p. 233)

²⁵See Sen, 1976

choice. This leads inevitably to modifying [Condition] L." ²⁶. But there are also some contrary ideas. In the context of social choice problems that permit for the protected spheres, impossibility result brought a serious questioning of the Pareto principle. People may agree on a particular ranking for quite different reasons (as in preferring x to y in the "Lady Chatterley" illustration), and a mechanical use of the Pareto rule irrespective of context seems questionable.

If in a particular case of conflict with Pareto, rights are deemed more desirable, then the Pareto condition should be weakened and made consistent with rights and no further modification to the libertarian condition should be necessary. Farrell (1976), Sen (1976), Suzumura (1978), Hammond (1980) and Austen-Smith (1982) have all resolved the Sen Paradox in this way with various weakening of the Pareto condition. And inversely, if social efficiency is deemed more desirable, then rights should be re-defined so that they must respect the society's interests. Blau (1975), Gibbard (1974), Hillinger and Lapham (1971), Karni (1974a), and Kelly (1976b) have tried to resolve the conflict by weakening Condition L rather than by weakening the Pareto principle.

Gaertner and Krüger find the solution attempts, via weakening the Pareto condition, interesting and quite successful, but not satisfactory. According to

²⁶See Blau, 1975, p. 401

them, this is mainly due to the following reasons. As long as the formal framework (i.e., the set of individual orderings) provides too little information on the motives behind each person's preferences, their evaluation remains a gratuitous piece of informal interpretation. (For an example of the arbitrariness of interpretation compare the two readings of the Angelina-Edwin case in Gibbard (1974, p. 398) and Sen (1976, p. 226)) They do not disagree with the idea of incorporating motives into the formal theory and of classifying them as to their acceptability in certain specific cases; they do not see, however, how this programme could be carried out in its full generality²⁷.

3.2.3. Weakening Condition L: Digressing the Liberalism

It is difficult to define what liberty means. One of the most fundamental questions raised in this context is related to the formulation of the concept of libertarian rights by Sen. It has been contended by Nozick (1974), Bernholz (1974), Gardenfors (1981) and Sugden (1981), among others, that this formulation does not capture intuitive notion of rights²⁸. In an important paper, Sen (1983) responded to some of these criticisms. This, however, led to further debates²⁹.

²⁷For attempts in this direction see Sen (1974, 1977)

²⁸See also Gibbard, 1982

²⁹See Sugden, 1985

One of the earliest critiques of Sen’s formulation of individual rights came from Nozick (1974). According to him, “. . . individual rights are co-possible; each person may exercise his rights as he chooses. The exercise of these rights fixes some features of the world. Within the constraints of these fixed features, a choice can be made by a social choice mechanism based on a social ordering ³⁰”. Nozick visualizes the right of an individual in terms of the individual’s freedom to choose from among several available options relating to some specific aspect of the social states, and the constraints on social choice are imposed when the individual, exercising his right, does choose one of the options ³¹.

Nozick was not the only one who criticizes liberty definition of Sen. Blau (1975) examined the rights from a different perspective which bases on the “intensity of preference”. It works by comparing the intensity of a person’s preference for choices on his own assigned pair vis-à-vis the same person’s intensity of preferences for choices on someone else’s assigned pair:

Ordinal intensity: If a person prefers x to a, a to b and b to y, then his preference for x over y is stronger than his preference for a over b. Furthermore, this is so even if he is indifferent between x and a, or between b and y, but not

³⁰Nozick (1974, p. 166)

³¹For detailed discussion see Gaertner, Pattanaik and Suzumura, 1992

both.

A person is "*meddlesome*" according to Blau if and only if his preference over the two alternatives in his own assigned pair is weaker than his opposition to someone else's preference over that person's assigned pair.

Blau tried to solve the impossibility by using a "modified liberalism" which makes the libertarian rights conditional on preferences being non-meddlesome³². Under various alternative versions of his "modified liberalism", the liberal privileges are withheld

- (a) for all if everyone's preference is meddlesome (SL'),
- (b) for all if someone's preference is meddlesome (WL'), and
- (c) for those whose preferences are meddlesome (L').

He felt that a right should be withheld from an individual whenever he felt more strongly about another person's private alternatives than about his own. This is an interesting concept; the trouble, however, is that with his notion of meddlesomeness, Blau could provide a solution only for societies of no more than two people. For three or more individuals he again obtained an impossibility result. In addition, Sen suggests that their points of views are totally different with Blau:

³²See Blau, 1975

“Our difference does not lie in our respective recognitions of the role of independence, but on precisely how to bring in "non-independent" considerations into the decision. Blau would like to sacrifice personal right (based on independence), retaining Pareto (also based on independence), and whereas it appears that in many circumstances being prepared to go against the Pareto principle is at least as reasonable. An alternative will be to follow approach (a) above, which will remove the sanctity of both the Pareto principle as well as of liberal privileges when preferences are "meddlesome" in the sense of Blau³³.”

Moreover, according to Gaertner and Krüger, the main reason for limited range of Blau’s solution lies in the fact that the meddlesomeness definition of Blau. It is constructed so that Blau’s notion of nosiness applies only to rather special cases; it does not, for example, cover pairs of strict preferences that are not nested within each other (cf. the profile that Blau used in his inconsistency theorem for more than two persons). They advise that, in order to be more successful, one obviously

³³According to Sen, we might decide to follow one of the following three alternative ways of discounting meddlesome preference ordering:

- a) ignore his entire ordering;
- b) ignore his ordering of non-self-regarding pairs;
- c) ignore his ordering of the self-regarding pair.

Sen is implying “ignoring entire ordering” of meddlesome preference by saying “to follow approach (a) above”. For a detailed analysis please see Sen, 1976 p.222

has to introduce some stronger restriction of condition L ³⁴.

Blau's "modified liberalism" is an example of libertarian rights being treated as alienable. But, Gibbard (1974) was the first successfully to modify L by making individual rights alienable under certain circumstances ³⁵. Following to his paper, a rights system is a set of ordered triples $\{x, y, k\}$ where $\{x, y\}$ is assigned to person k . Under ordinary circumstances person k has an absolute right over to determine the ranking between x and y , in the sense that, if he prefers x to y , then x is judged socially better than y . But this right can be waived if others beside k "claim their rights" to z over x , and person k himself regards y at least as good as z . Others can claim their rights to z over x if and only if there is a sequence of strict preferences: z over a_1 , a_1 over a_2, \dots, a_{m-1} over a_m and a_m over x , such that the ranking over each pair is derived either from Pareto preference or from the preference of someone other than k to whom the relevant pair has been assigned under the rights system. This weakening of the libertarian requirements makes it consistent with the Pareto principle for a social decision function with unrestricted domain. Gibbard proceeds to show that these alienable rights are

³⁴For a detailed discussion see Gaertner and Krüger, 1981

³⁵Gibbard (1974), and following him many other authors, have formalized rights in terms of issues. See for example Breyer (1977), Suzumura (1978), Kelly (1978), Hammond (1980) and Gaertner and Krüger (1981, 1982).

waived only under very special circumstances ³⁶.

But Gibbard's ingenious right system construction is also subject to a similar criticism of Sen about Blau:

“The ethical interpretation of the Gibbard system of alienable rights appears to be open to the same type of criticism as Blau's "modified liberalism". When meddling in each other's affairs causes a cycle involving the Pareto principle and personal rights, the axe in the Gibbard system falls invariably on personal rights (based on the "self-regarding" part of a person's preference), leaving intact the effectiveness of the Pareto rule (based on the "non-self-regarding" parts of people's preferences).”

Also Greatner and Krüger blame the Gibbard's procedure for making the recognition of rights depend on the total preference profile of society, which detracts too much from their character of being genuine rights. Furthermore, according to them, his solution is ad hoc in the sense that it is explicitly devised for, and only for, avoiding the social preference cycles of Sen's paradox. Karni (1978) has also support the criticisms of Greatner and Krüger by showing that Gibbard's

³⁶For formal statements, see Gibbard, 1974

rights' system is such that one individual, by manipulating his own preference ordering, can achieve that the right of another person is waived.

The fundamental question within all of these debates is whether individual preference ordering solely enough for determining the social outcome or some descriptive motivations behind the preferences should be examined. Since the basic intention of this work is to look Sen's world from social choice theory perspective we are not going to look into the deeper analysis of this question. In the social choice manner there also exists some other questions. For example, is the Sen's original definition of liberalism an obstacle to solve impossibility? From this point of view we can conclude that while Blau's and Gibbard's methods consist of accepting the basic idea behind Condition L but qualifying its scope in terms of preferences over other pairs. However, some other authors have proposed ways of avoiding the dilemma by declaring Condition L to be essentially inappropriate.

4. Section IV

4.1. Alternative Model

In this part, Sen's Liberal Paradox is examined from a different angle. If we have more information about alternatives, what would be the consequences? Could we

find a way to get a possibility result? This chapter mainly tries to answer these questions. Suppose that we have a Relevance System which gives us the relationship between alternatives and individuals. Intuitively, relevance system gives us which alternatives are whose "own business". Formally, a relevance system is a function which assigns a group of people for every alternative. Our concern is whether this information useful or not. Fortunately, the answer is "yes" in the Liberalism context. We will name the model that is constructed in this chapter as "alternative model". In order to construct the alternative model, first we will give basic notions and axioms, after that we will show the results.

4.1.1. Basic Notions

Let $N = 1, 2, \dots, n$ be the finite number of individuals.

Let $X = \{x, y, z.. \}$ be the finite number of alternatives.

Linear preference of an individual i is shown by R_i . Also, R corresponds to preference profile as in standard literature³⁷.

A **collective choice rule** is a functional relationship that specifies one and only one social preference relation R for any set of n individual orderings (one

³⁷Note that we use only linear preferences in this work. By this it is meant that individual preferences are complete and transitive binary relations.

ordering for each individual).

A **social decision function** $\alpha(R)$ is a collective choice rule, the range of which is restricted to social preference relations that generate a choice function.

We call a set A_i is "**at least as good as**" A_j (or $A_i \succcurlyeq A_j$) for $\alpha(R)$ iff³⁸

(i) *CASE I* : $s(A_i) = s(A_j)$

$$s(\{x \in A_i : \exists y \in A_j \text{ s.t. } x \alpha(R) y\}) \geq s(\{x \in A_i : \exists y \in A_j \text{ s.t. } y \alpha(R) x\})$$

(ii) *CASE II* : $s(A_i) \neq s(A_j)$ (WLOG assume $s(A_i) < s(A_j)$)

$$s(\{A_{j_i} \subseteq A_j \subseteq X : s(A_{j_i}) = s(A_i) \text{ and } A_i \succcurlyeq A_{j_i}\})$$

$$\geq$$

$$s(\{A_{j_i} \subseteq A_j \subseteq X : s(A_{j_i}) = s(A_i) \text{ and } A_{j_i} \succcurlyeq A_i\})$$

A binary relation over sets, \succcurlyeq , is **complete** iff $\forall A_i, A_j \subseteq X$ either $A_i \succcurlyeq A_j$ or $A_j \succcurlyeq A_i$ holds.

A binary relation over sets, \succcurlyeq , is **transitive** iff $\forall A_i, A_j, A_k \subseteq X$,

$$A_i \succcurlyeq A_j \text{ and } A_j \succcurlyeq A_k \Rightarrow A_i \succcurlyeq A_k$$

³⁸ $s(A_i)$: cardinality of A_i

A **relevance system** is a function such that, for every given alternative it assigns a group of individuals who is related to that alternative.

$$RS(x) : X \longrightarrow 2^N \setminus \{\emptyset\}$$

Definition of relevance system is very close to the definition of rights-system of Gibbard (1974)³⁹. However, the difference between right system and relevance system notions plays quite important role in this model. First of all, relevance system definition is more restrictive than Gibbard's rights-system. Hence, Gibbard's construction of right system represents more general class of relevance systems. But relevance system separates the alternative set into partitions and does not allow power conflicts or paradoxial right distributions over sets (or pairs) of alternatives. Therefore, relevance system allows us to construct a model where decision power within and between partitions are separated.

We call a set of alternatives is a **relation group** iff for every alternative in the set there is a unique group of people given by the relevance system.

$$A_k = \{x \in X : RS(x) = RS(k)\}$$

³⁹Gibbard defined rights-system as an assignment of ordered pairs of alternatives to individuals. Note that Gibbard's rights-system is defined over pairs but relevance system is defined over singletons.

An **adjustment function** $h(\alpha(R))$ for **social decision function** $\alpha(R)$ consist of following steps:

1. Apply social decision function $\alpha(R)$ for a given preference profile R
2. Use the relevance system and determine which subset of alternatives is related to which group of people
3. By using information in steps (1) and (2) find the **inter-set ranking** over the subsets of alternatives (which are the partitions of X)
4. By using social decision function $\alpha(R)$ over the subsets of alternatives and the people who are related to those subsets of alternatives determine the **intra-set ranking**
5. By combining (3) and (4) get the adjusted social ranking

4.1.2. Axioms

CONDITION U (Unrestricted Domain): Every logically possible set of individual orderings is included in the domain of the collective choice rule. In this alternative model unrestricted domain is assumed unless another domain restriction stated explicitly.

CONDITION LPO (Local Pareto Optimum): If every individual who

has decision power over the same relation group, prefers any alternative x to another alternative y in that relation group, then society must prefer x to y .

CONDITION L (Liberalism): If alternatives x and y are only business of the people in the set S then their decision over (x, y) determines the social decision over (x, y) .

At this point, it is also useful to remember Sen's original definitions of Pareto Optimality and Minimal Liberalism.

CONDITION PO (Pareto Optimum): If every individual prefers any alternative x to another alternative y , then society must prefer x to y .

CONDITION ML (Minimal Liberalism): There are at least two individuals such that for each of them there is at least one pair of alternatives over which he is decisive, that is, there is a pair of x, y , such that if he prefers x (respectively y) to y (respectively x), then society should prefer x (respectively y) to y (respectively x).

Note that, if every person has a decision power on every alternative then LPO and PO are same. Also, if S in the definition of L is a singleton set and there are at least two different such sets then L and ML are same.

4.1.3. Results

Lemma 1. *For a given relevance system, if a social decision function $\alpha(R)$ is PO then adjustment function, $h(\alpha(R))$, of $\alpha(R)$ satisfies the conditions LPO and L.*

Proof:

Take any social decision function $\alpha(R)$ which satisfies PO.

First, we will show that adjustment function, $h(\alpha(R))$, of $\alpha(R)$ is LPO. Take any $\bar{R} \in \mathfrak{R}$ such that $x \bar{R}_i y \forall i \in N$. Then, $x \alpha(\bar{R}) y$ by PO. Since LPO just considers the alternatives which are in the same relation group, let's consider the alternatives x and y such that $RS(x) = RS(y) = S$. Then, $x \bar{R}_i y \forall i \in S$ since $S \subseteq N$. Furthermore, $h(\alpha(R))$ determines it's intra-set ranking by using $\alpha(R)$. Therefore, we have $x h(\alpha(\bar{R})) y$. Hence, $h(\alpha(R))$ is LPO.

Now, we will show that adjustment function, $h(\alpha(R))$, of $\alpha(R)$ satisfies the condition L. Suppose adjusted social ordering is not Liberal. Then \exists a preference profile \hat{R} , a pair of alternatives (x, y) and a group of people $S \subseteq N$ such that $RS(x) = RS(y) = S$ and $x \alpha(\hat{R}_s) y$ (where $\alpha(\hat{R}_s)$ shows the social decision restricted to people S) but $y h(\alpha(\hat{R})) x$. Note that, if $RS(x) = RS(y) = S$ then people in S are decisive over (x, y) . Since construction of adjustment function $h(\alpha(R))$ respect decisiveness of groups, $x \alpha(\hat{R}_s) y$ implies $x h(\alpha(\hat{R})) y$. Therefore

we have a contradiction. Hence, $h(\alpha(\hat{R}))$ is Liberal. ■

Theorem 2. *Given any relevance system, there exists a social decision function which satisfies LPO and L*

Proof: Just name the adjustment function, $h(\alpha(R))$, as social decision function. ■

As it is mentioned before, if everyone is related to every alternative than LPO implies PO. Also, if S in the definition of L is a singleton set and there are at least two different such sets then L and ML are same. But why do we have this possibility result? What is different then Sen's Liberal Context? It is not hard to see the answer. We have two particular cases which are interesting:

1. All alternatives are relevant for all people. In this case LPO implies PO.
2. x and y are relevant for set of individuals S , w and z are relevant for set of individuals T . In this case, if S and T are singletons then L implies ML.

Obviously, these two cases can not hold simultaneously unless $S = T = N$. In case 1 every alternative is related to everyone. Since there are no local decisions; Local Pareto Optimum and Pareto Optimum conditions are same. And note that, in this case every social decision function satisfies Liberalism condition. Therefore, in this case every social decision function which satisfies Pareto condition will be

Liberal also. Actually, even only this case shows that Sen's impossibility result mainly due to lack of information about alternatives. In case 2, situation is a bit more complicated. Since in this case L implies ML, by Sen's result we know that there exists no social decision function which is PO and ML. But we can still find a social decision function which is LPO and L. The intuition is simple. In this case LPO implies L. Consequently, we have this possibility result. Even though it might be argued that LPO is a very strong condition, this result still important since it shows the importance of the description of alternatives in the Liberalism context.

Under these considerations, Sen's impossibility result is due to desperate investigation of social decision function which works under both situations described above. If Pareto Optimality is more desirable condition for society then relevance system should put us into the first case, but if Liberalism is better for society then we should be in the second case. If we want both, then there is no such alternative description.

5. Section V

5.1. Conclusions

Individual desire's conflict with social efficiency was a very popular topic during 1970s. After Amartya Sen's pioneering work of "The Impossibility of A Paretian Liberal", an enormous number of papers published on different aspects of this conflict. This study mainly describes how various authors contributed to this literature and tries to incorporate the importance of "*description*" in individual oriented problems of Social Choice Theory. The alternative model developed in Section III shows that more information about the nature of alternatives allows us to find a way out from the conflict between social and individual decisions. It should be noted that alternative result does not say anything about *fairness*. Further researches in this literature might focus on fairness issue more since the fundamental question lies on how to protect the individuals' rights. We need to think more about the protection of global rights that every human-being should have under local decision powers.

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