Extended preferences and freedom of choice

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Abstract. The common choice theory in economics is based on the assumption that an individual is defined in terms of a binary preference relation. This preference relation is defined over alternatives without taking into account menu dependence and, in particular, freedom of choice or, more generally, the set that contains the alternatives. In this study we clarify the nature and the significance of freedom of choice which may positively or negatively affect the individual’s welfare. Our proposed extended preference relation of the individual takes into account both the particular alternative and the opportunity set that he faces. This extended relation does not induce ranking of opportunity sets. Its restriction to a particular opportunity set is the paradigmatic preference relation and it can capture the dependence of preferences on freedom of choice. Our main result establishes the inconsistency between dependence of extended preferences on freedom of choice and the existence of a utility that represents the paradigmatic preference relation and any of its restrictions.

Sen (1988, pp. 289–290) interprets the set of alternatives faced by an individual as a set of feasible actions from which the individual can choose. If the only role freedom of choice plays is the distinction between feasible and non-feasible alternatives, then the following options are equivalent:

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1. Choose alternative $x_1$ from the set $\{x_1\}$.
2. Choose alternative $x_1$ from the set $\{x_1, \ldots, x_n\}$.

However, if freedom of choice is of some intrinsic value, then the valuation of a set of alternatives need not coincide with the valuation of the chosen alternative. The question is whether the valuation of freedom of choice is based on considerations that go beyond its instrumental (distinguishing) role. The fact that individual choice depends on freedom of choice was noted by several scholars (see for example, Gravel 1994, 1998, Klemisch-Ahler 1993, Pattanaik and Xu 1990, Puppe 1995, 1996 and Sen 1988) who attempted to study the implications of this dependence.

In this study we clarify the nature and the significance of freedom of choice which may positively or negatively affect the individual’s welfare. The extended preference relation of the individual on which we focus captures the dependence of preferences on freedom of choice. Our main result establishes the inconsistency between dependence of extended preferences on freedom of choice and the existence of a utility that represents the paradigmatic preference relation and any of its restrictions.

Two related impossibility results were obtained by Puppe (1995) and by Gravel (1998) who focus on a preference relation $\succ$ which is defined over sets of alternatives. Gravel refers to this preference relation as a representation of the individual’s “overall well being”. Puppe and Gravel assume that this extended preference relation respects both freedom of choice and the common paradigmatic preference relation $R$ which is defined over alternatives (assumptions $F$ and $PB$ in Puppe 1995 and $A3$, $A4$ in Gravel 1998).

In contrast, our extended preference relation $R^e$ is not defined over sets of alternatives but over alternatives and the sets containing them. In this context it is possible to define positive or negative appreciation of freedom of choice which is a particular form of menu dependence. In our case there is no need (and, in fact, it is impossible) to define “basedness” conditions (see Puppe 1995) or conditions of respect for the common preference relation $R$, since the individual is not defined by two separate preference relations $\succ$ and $R$, as in Gravel and Puppe, that need to be compatible. Our extended preference relation $R^e$ does not induce any particular preference relation over sets of alternatives. However the paradigmatic preference relation $R$ is naturally obtained as its restriction.

Puppe (1995) demonstrated that the following conditions cannot be satisfied simultaneously: continuity of $R$, transitivity of $\succ$, some form of compatibility between $\succ$ and $R$ (the ‘basedness’ condition) and positive respect of freedom of choice by $\succeq$.

Gravel (1998) proved that the following conditions are inconsistent: transitivity of $\succ$, another form of compatibility between $\succeq$ and $R$ (the ‘basedness’ condition) and positive respect of freedom of choice by $\succeq$.

These two impossibility results are independent. Since they are obtained in a conceptual framework which is different from ours, these results are not implied by our main result and vice versa.