CONSTRUCTION OF PREFERENCES

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Abstract

Standard economic theory suggests that people's preferences are revealed by their behavior. However, behavioral economics states that often preferences are constructed mainly because of the limited rationality people have. This paper illustrates the behavioral theory of decision making focusing on judgement under certainty and decision-making under uncertainty. The existence of the phenomenon of preference reversal together with mental accounting and the other four effects – endowment, anchoring, decoy and framing - presented above suggests the discrepancy between the standard model of choice under certainty and what usually happens in practice and certified the fact that in real world preferences are not revealed, but constructed.

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1. Introduction

The concrete definition of the concept of preferences has proved to be quite difficult in Economics, over time economists using this term to illustrate different things. Two of the meanings attributed to the concept of preferences are indicated by Amartya K. Sen (1973) who notes: "Preferences can be defined in a way that is consistent with choice or can be defined according to well-being, as it is seen by the person concerned. " (Sen, 1973, p.73) Other authors such as Hausman (2012) define preferences as subjective orders of people over a set of options, this order being based on the attitudes and values that the person attaches to results of each option. A more recent definition comes from the area of neuroscience, more precisely from Neuroeconomics,

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which describes preferences as "characterized by a subjective affective state and a tendency to act." (Glimcher et al., 2008, p.237)
So far, economic science has treated the concept of preferences either as a behavioral instance or as a mental instance, their nature being established according to the relationship between preferences and behavior. (Ariely et.al, 2008) Preferences as behavioral instances represent the objective approach, specific to the neoclassical economy, in which they can take a numerical value in the form of utility. Such preferences can be deduced from the observable choices of agents, "the popularity of this approach in economics can be attributed to the obsession with observable phenomena and the peculiar idea that choice is the only human aspect that can be observed." (Sen, 1986, p.18) Seen in such a manner, it is the preferences that determine the behavior.
The second view, preferences as mental instances, has its origins in psychology and belongs to behavioral economics. Like neoclassical economists, psychologists believe that preferences determine behavior, but they cannot be deduced from it. Unlike the objective approach, which views preferences as stable and consistent, the behavioral (subjective) approach views preferences as courts constructed at the time of decision and dependent on situational and internal decision makers such as memory or inferred preferences. For this reason, the term attitude is preferred to that of preference, attitudes being seen as mental representations that illustrate the expressed psychological tendency to evaluate an entity with a certain degree of favorability. This article treats this second view on human preferences.

2. Behavioral theory of decision making

The concept of preferences revealed by behavior (Samuelson, 1950) opens a real Pandora's box in the area of consumer theory. The emergence of paradoxes as a result of empirical testing of standard model hypotheses, as well as the proliferation of voices supporting the development of economic theories based on real human behavior (Simon, 1955), resulted in the idea that preferences are not preexisting, but rather constructed at the time of the decision. The idea of constructivism is taken from psychology where various cognitive processes, for instance memory, have been characterized as constructive. With the advent of cognitive psychology, other processes such as perception and attention were also considered constructive processes.
The emergence of the new concept the construction of preference is primarily due to critical voices about methodological positivism that emerged in mid-1990s. Thus, in full neoclassical momentum, Simon (1955) argues that if

economists are interested in understanding the real decision-making behavior of agents, then they should give more importance to psychological factors such as memory, perception or learning, factors that determine how in the real world agents' behavior deviates from the theoretical model of <homo oeconomicus>. Thus, if the agents are endowed with this limited rationality and the decision is also determined by the influence of some psychological factors, then the normative axiomatic model can hardly approximate their real behavior. Another factor that led to the constructivist perspective of preferences was the emergence of studies on information processing, which aimed to understand how people accumulate information and how it is combined to reach a decision. Many of these studies have concluded that agents do not seek to use the information as described by the standard utility model, but rather the information is filtered and undergoes certain changes depending on the mental operations to which they are subjected. To these is added the psychological theory of choice which does not treat the choice as a process related only to an evaluation of the options available, but as a sequential process in which the agent intervenes on the description of variants and, moreover, the latter can also be shaped by environmental factors. Decision and preference are thus the result of a subjective process. In this perspective, editing and framing become basic elements in the construction of preferences.

The psychological theory of choice materialized in the Prospect Theory developed by Kahneman and Tversky (1979). The two present the decision-making process as having two stages: the editing stage and the evaluation stage. The insertion of the editing stage before the election is one of the novelties brought by this new theory. Through the editing stage, the agent intervenes on the options before evaluating them, the object of his choice not being the objective states of things, but his mental representations of them. At the same time, the two also develop the concept of framing effects, which starts from the idea of editing in the theory of estimating chances. Framing effects (Kahneman and Tversky, 1984; Tversky and Kahneman, 1981) illustrate the idea that the way options are presented has a great impact on judgment and decisions. The two concepts of editing and framing can be seen as developments of Simon's (1965) ideas, editing being assimilated to the internal environment, while framing effects to the external environment.

The behavioral perspective of the decisions presents the choice as a constructive process based on preferences and beliefs that are edited by the agent through his own abilities and influenced by the environment in which

the decision takes place. Behavioral studies related to the construction of preferences can be divided into two categories: studies related to subjective judgment and those related to the decision-making process. (Camerer et.al., 2011) The recurring theme of studies belonging to the BDR emphasizes that preferences and reasoning about choice objects, regardless of their level of complexity, are often constructed and rarely revealed. This was first highlighted by Slovic and Lichtenstein (1968), Lichtenstein and Slovic (1971, 1973) with the identification of the phenomenon of preferences reversal, the situation in which the agent is faced with a task of awarding a price, followed of one in which he has to choose between two lotteries. This type of experiment most obviously illustrating the constructive characteristic of preferences. (Tversky et.al, 1990) March shares the opinion of the two and attributes the constructivist character of the limited capacity preferences of the agents, the same ones that Simon popularized decades ago: "People have unstable, inconsistent, incomplete and inaccurate goals people's abilities limit the accuracy of their preferences. " (March, 1978, p.598) From March's words we understand that preferences cannot be observed as a result of consulting an ordered list of them, because the instability and inconsistency due to the limits of human nature cause them to be constructed. In the same note, but referring directly to the economic theory of expected utility, Tversky et.al (1988) argue that preferences are not the result of an algorithm, but rather agents are endowed with a multitude of methods learned from experience to identify their preferences. and forms reasoning. The strategies that agents use to arrive at a decision, as well as how they combine information, depend to a large extent on the qualities of the agent, the context of the decision and the characteristics of the decision-making problem, including how to respond to a decision. problem - choice or reasoning, and the similarity of alternatives. Depending on these characteristics, the agent uses different strategies to determine his preferences.

3. Judgement under certainty

Contrary to the standard model that agents' judgments are the result of precise calculations that seek to maximize utility, behavioral economics argues that preferences are in fact the result of subjective evaluative judgments. (Tversky and Kahneman, 1974) Starting from this idea, the proponents of behavioral economics identify several phenomena that contradict the hypotheses of the rational model and that, in their opinion, lead

to the formation of subjective judgments. Among these phenomena we find endowment effect, anchoring, decoy effect and mental accounting.

Endowment effect (Knetsch, 1989) is the situation in which utility is closely linked to possession. People who own a property tend to value it more than others, no matter how they came into their possession - by purchase or donation. The situation in which this effect becomes prominent implies the difference between the price that potential buyers would be willing to pay for a good and the price that potential sellers would be willing to accept. The psychological factor underlying the occurrence of the possession effect is the aversion to loss.

Anchoring describes the situation in which the agents' preferences are anchored in other phenomena belonging to the decision-making environment, phenomena that at first sight may seem irrelevant for the decision. Sometimes the anchors can take the form of numbers or they can be of another nature. Ariely et.al (2003; 2006) showed how the latest figures social insurance number can influence the price estimate for different products. Results of the study showed that subjects whose social numbers ended in higher numbers gave a higher price to the products. The subjective value assigned to each object was affected by an apparent element unrelated to the decision in question. Authors describe this phenomenon as arbitrary coherence, which they characterize by the fact that: "before printing, values have a large arbitrary component, i.e. they are particularly sensitive to different influences. After printing, the values become <local> consistent as agents try to reconcile future <similar> decisions with <initial> ones." (Ariely et al., 2003, pp.74-75)

The decoy effect occurs in situations where the agent has to show his preference over a certain option in a list of options or menu and involves the introduction of an irrelevant option in the considered set. Thus, in a decision in certain situations with variants A and B, a third variant A 'inferior to A is introduced, which has the role of putting variant A in a more favorable light than B. The effect was revealed by Ariely (2008) who, upon careful consideration of an offer to sell subscriptions to an online magazine, identified the following options: (1) one-year subscription for the online version at a price of $ 59; (2) one-year subscription to the print version at a price of $ 125 and the latest version (3) one-year subscription to the online version and print at the price of $ 125. The choice psychology identified by the author indicates that in the case of reducing the choice only to variants (1) and (3) the decision is difficult because the agents have to reach a compromise between price and benefits, they may prefer option (1) cheaper, but less profitable. By

introducing variant 3, the comparison of variants (3) and (2) is easier because they have the same price and different qualities. Under these conditions, agents will prefer variant (3) to variant (2), the latter being the dominant option.

Mental accounting (Thaler, 1985) describes how people process and organize information. Thaler defines mental accounting as "a set of cognitive operations used by individuals and households to code, categorize, and evaluate financial activities" (Thaler, 1985, p. 183). Mental accounting refers to how results are perceived, the assessment of situations, combining various results, as well as cataloging activities in different accounts. For example, in one of his experiments, Thaler found that people, 64% of the subjects interviewed, prefer two smaller gains of $ 50 and $ 25, respectively, than one of $ 75. This contradicts the standard model whose axiom of invariability holds that people are indifferent between the two options. (Thaler, 1985) The inconsistency of preferences can also be the result of hedonic editing. It is part of mental accounting and considers the internal processes by which individuals encode and analyze information. Using the value function in prospecting theory, the hedonic editing used by respondents in the example above can be illustrated as follows: v ($ 50) + v ($ 25)> v ($ 50 + $ 25).

A similar phenomenon occurs when the results of a decision are evaluated. The standard model states that the net value of a choice is the difference between cost and benefit. Thaler (1985) rejects the view of cost as a loss and proposes two types of utilities involved in any transaction: the utility of the purchase - equivalent to the consumer's surplus, it describes the value obtained in relation to the price paid, and the utility of the transaction - the expected value of the transaction. the difference between the reference price and the price paid.

4. Decision-making under uncertainty

Standard economic theories such as ordinal utility or expected utility assume the existence of the invariance principle. This essential feature for all standard normative theories can take two forms: descriptive invariance and procedural invariance. The first, descriptive invariance, refers to the way in which options are described, neoclassical theory arguing that the way in which the possible results of a choice are described does not influence the agent's preference for one variant or another. Second, procedural invariance, refers to the fact that regardless of the method by which the preferred variant is selected, the agent will have stable preferences, preferring the same variant

regardless of how the choice will be made. (Tversky et.al., 1996; 1990) Possible deviations from the procedural invariance assume that certain characteristics of the choice, such as how one responds to a decision problem can cause a change in the order of preferences. Examples of this are the ways in which an agent can answer a lottery: the agent has to choose between two lotteries or he has to say a sum of money for which he would play or give up playing another lottery.

Information about an agent's preferences can be obtained using several methods. First, preferences can be deduced by observing the choice. This method is the one preferred by neoclassical economists and one that underlies the theory of revealed preferences. A second procedure is one in which a subject is asked directly about his preferences on consumption variants or lotteries. With regard to lotteries, agents may express their views on them or award a price to each lottery. If the agents express their opinion on a lottery they make a list in which the maximum value is assigned to a preferred variable. In the case of awarding a lottery price, there may be two situations: awarding the sale price or awarding the purchase price. If a sale price is awarded, the subject owns the lottery and indicates the minimum price for which he would sell the right to play that lottery. In this case preferred option is considered to be the one for which the maximum selling price is requested. If purchase price is assigned, then lottery belongs to the moderator and the subject indicates the maximum price he would pay to play the lottery. In this case it is observed that the preferred option is the one for which the highest price is offered. (Lichtenstein and Slovic, 1971)

The situation in which the preferences of an agent diverge due to the way the variants are selected is known as preferences reversal. This is considered one of the major anomalies of the standard theory of utility and involves a violation of the principle of invariance. The phenomenon was first identified by psychologists (Lichtenstein and Slovic, 1968) without having the precise purpose of testing the standard decision-making model, they only intend to study the role of probabilities and results in risk-taking decisions “The purpose of this study is to investigate the importance of certain psychological variables neglected so far in risk-taking studies - in particular the study of a person's beliefs about the importance of probabilities and outcomes, and his or her ability to behave on their basis when processing the information contained in the description of lotteries. (...) The experiments were not created to test the theory of expected subjective utility." (Lichtenstein and Slovic, 2006, p.49) The main contribution of the two psychologists was that they identified a type

of experiment by which the deviation from the standard theory of preferences is visible and which can be reissued by economists to test its validity.

After the confirmation of the 1968 results, the phenomenon of reversal of preferences attracted the attention of both psychologists and economists, which led to a series of replications of the initial study. The purpose of these studies was none other than to eliminate the phenomenon of reversal through procedural variations or by introducing new incentives. The most vehement critics were economists, with Grether and Plott's (1979) study being a conclusive example of this, with the two making public their goal of "discrediting the work of psychologists in economics." (Grether and Plott, 1979, p.623) They do not question the results of Lichtenstein and Slovic (1968, 1971, 1973), but wonder whether they also occur in situations relevant to economists. Moreover, they put the phenomenon on the basis of methodological errors made by the two psychologists. In their experiments, Grether and Plott try to control the four factors, but the phenomenon of reversal of preferences reappears, which is why the two conclude: "Needless to say, the results are not what we expected. Our experiment controlled all the theoretical-economic explanations we identified. The phenomenon of reversal of preferences, which is not in line with the traditional theory of preferences, persists." (Grether and Plott, 1979, p.634)

Tversky and Thaler (1990) concluded that the phenomenon of reversal of preferences is not only a feature of lotteries, but can be extended to all categories of decisions. Moreover, subsequent studies have shown that the phenomenon can be attributed not only to procedural invariance, but also to descriptive invariance (Ariely et.al., 2003), which means that not only the selection method, but also the way in which they are described variants can cause preferences to be reversed.

One of the most important phenomena identified by behavioral economics is that of framing effects. This is a violation of the principle of invariance, more precisely a violation of descriptive invariance. Numerous studies have shown that the subjective values, attitudes and preferences of agents depend on the context and how the options considered are presented. For example, when agents were asked about their level of happiness, their assessment was influenced by a preliminary question about the number of recent meetings, with framing effects thus playing an important role in reversing preferences (Slovic and Lichtenstein, 1983; Tversky et., 1990) The framing effects define the situation in which people prefer a variant A to another B when the decision is framed in a certain way, as later, when the framing is modified they prefer

variant B to variant A. phenomena have been identified both in laboratory studies and in field studies, in different situations. Various types of framing effects have been identified by Levin et al. (1998) These have been identified either as context-dependent (Wang and Johnson, 1995), or attributed to the nature of the intended choice, content, and even decision-making variables. (Wang, 1996)

Tversky and Kahenman (1981) are among the first to provide a description of the phenomenon of framing effects. In an experiment called Asian Disease, study participants are told that 600 people can suffer from a disease and are asked to choose between two different framing options. The positive framework, which describes the lives to be saved, offers two options: A - safe saving of 200 lives; and B - one-third chance to save all 600 lives, and two-thirds chance to save no one, while negative framing offered the following options: C - certain death of 400 people, and D - two-thirds chance that 600 people would die and a third chance that no one would die.

5. Conclusions

The existence of the phenomenon of preference reversal together with mental accounting and the other four effects presented above suggests the discrepancy between the standard model of choice under certainty and what usually happens in practice. All of these phenomena along with those identified by Kahneman and Tversky in their first research program Heuristics and Biases describe how preference are not reveled, but constructed at decision time. Starting from the standard model, behavioral economics offers solutions to better understand the behavior and decisions of agents by identifying the underlying processes. Their identification is part of the procedural rationality that Simon saw as a component of limited rationality.

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