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# Reflecting on Rational Choice Theory

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Historically, theories based on individual decision-making have formed the basis of nearly all microfundations for economic analysis. One of the most relevant theories that have traditionally constituted the basis of microeconomics is rational choice theory (RCT). The rational choice model is understood through an optimization-based approach, where a representative utility-maximizing agent, under certain given constraints, maximizes a real-valued utility function [1]. This approach surged from a string of intellectual consensus in economics, beginning in the XIXth century. At the time, utilitarian philosophers were in search of an objective criterion for a science of government, through which policymakers could implement those policies that would maximize utility for the greatest possible number.

However, with the emergence and development of modern economics, RCT has been subjected to continuous scrutiny due mainly to its required assumptions, which can seem unreal to many economists. Some of this assumptions and postulates establish that individual agents are homo economics, meaning that they are rational self-seeking agents and will always perform a cost-benefit analysis to determine which option will maximize their utility, also suggesting that individual self-driven rational actions will maximize welfare for the whole of society. In order to represent agents, through RCT economists make further assumptions about many aspects. In terms of the nature of preferences, RCT establishes that preferences need to be asymmetric, transitive, and complete, in order for agents to be able to maximize utility. Also, in some situations, as when looking for Nash Equilibrium, coordination of beliefs is assumed, which goes beyond the basics of RCT. However, some of these assumptions have been proved false at least under certain circumstances, as, for example, the branch of behavioural economics has demonstrated. Independently of it, some economists still defend that the falseness of some assumptions of RCT is not enough to debunk the whole theory or its validity. Along with it, a parallel debate has surged regarding whether a value-free RCT is possible or not, which delves into the normative and positive economics discussion that has been going on for more than a century.

Therefore, in the remaining of this article I will first analyse if the fact that some of the basic assumptions of RCT have been proven false is enough to debunk the validity of the whole theory or whether we should base this judgement on its predictive power. Later on, I will go on to assess if a value-free RCT is possible or even convenient. For this purpose, I will draw upon the work of

some of the best economic theorists as Milton Friedman, Daniel M. Hausman, Amartya Sen or Julian Reiss, to name but a few [2-5].

Firstly, we should note the great confusion that has existed and still exists today when differentiating between positive and normative economic theories. Positive economics is related to "what is" in a sense of being fact-driven and objective, involving general economic laws and generally accepted economic principles. On the other hand, normative economics is related to "what ought to be", involving policy recommendations, judgements about different economic objectives, or their balance. Historically, RCT has been included in positive economics due to being an assumed proved theory with objective assumptions and conclusions. However, over the last decades a lot of debate has arisen around the issue of the veracity or not of the main assumptions of RCT. For some authors as the veracity of the assumptions underlying the model is not essential, as the ultimate goal of positive science is developing theories or hypotheses that are valid for predictions about phenomena which haven't been observed yet. It needs to be mentioned that Friedman puts such a strong emphasis on positive economics and its development because he considers that correct economic policy depends much more on the progress of positive economics than normative economics, as the former would yield conclusions that are widely accepted and would contribute to form a consensus. Following this chain of reasoning, economic theory must be more than a structure of descriptive tautologies and should be able to predict future consequences of certain actions and policies. However, the standard for comparison between hypotheses shouldn't be centred just on the accuracy of its predictions, but also on the costs of testing an alternative hypothesis which might yield greater accuracy. Friedman argues that even in the case that an alternative hypothesis, which yields better predictions, arises, the two hypotheses: the status quo and the new one should be balanced against the cost of achieving them. In this sense, in some situations it may not pay to use more general hypotheses or theories, because even though more of their assumptions may be correct and more accurate, it won't justify the extra cost of using it. Furthermore, it may be the case that even in these situations, despite the apparent falsity of the assumptions of the hypothesis; it has great plausibility due to the conformity of its implications with empirical observations [2].

Due to the relevance that Friedman gives to the accuracy of predictions of RCT, we could be tempted to categorize his views

as purely instrumentalist. However, even from an instrumentalist perspective, in which all consequences of a theory are relevant, it would be impossible to defend Friedman's claim that the realism of the underlying assumptions of theory are irrelevant for its scientific validity. Friedman, through its argumentation rejects a standard instrumentalist view, as he defends that the goal of economics is always "narrow predictive success" for "the class of phenomena the hypothesis is designed to explain" [2]. With respect to this, makes a good counterargument to Friedman's views by setting the example of a car and testing for its correct functioning. The metaphor is as follows: A good used car should drive safely, economically, and comfortably. Therefore, following Friedman's thinking, the only test of whether a used car is good would be to test it on the road to observe if it drives safely, economically, and comfortably. However, anything one discovers by opening the hood and checking the components would be irrelevant to its assessment. Almost everybody would think that not considering the good state of its components when assessing a car is an incorrect procedure. Well, if here we change road test for predictions and components with assumptions, we can see, in a simplified way, why Friedman's reasoning is incorrect [3].

Friedman's belief that there is no point in examining the veracity of the assumptions of a theory if it were possible to do a total assessment of its performance with respect to the phenomena it was designed to explain, can therefore be deemed incorrect. The point of a theory is to guide us in certain circumstances where we do not already know whether predictions are correct. Therefore, it is essential to examine the assumptions of a theory and test for their veracity. The realism of assumptions of a theory is essential when extending the theory to new circumstances or when the theory starts presenting predictive failure, as can be the case of RCT. However, here I'm not saying that the assumptions need to be perfectly true but adequate approximations to reality and whether its partial falsehood will matter for the descriptive and/or predictive purposes of a theory [3].

Once we have established that the veracity of the assumptions of a particular theory is relevant for its success as a normative/descriptive theory, we should now briefly go over the veracity (or not) of certain assumptions underlying RCT, one of the most renowned behavioural economists, differentiated two different cognitive processes that each person has, and divides them in system 1 and system 2. The operations of system 1 are fast, automatic, effortless, associative and difficult to control or modify, while system 2 operations are slow, serial, effortful, and deliberately controlled, while being relatively flexible and rule-governed. According to theses descriptions and the previously described assumptions of RCT, we could quickly reach the conclusion that economic agents would only be acting as rational and self-seeking maximisers under system 2, but not under system 1. Therefore, it shows that RCT's assumptions are not valid or true under many circumstances, which depend mainly on framing effects. According to, intuitive impressions are the anchor for judgement and only in a small fraction of cases an acknowledged correction to these judgements will be needed. This breaks with the universality of RCT by showing that individual agents are much more complex than the homo economics representation of them [6].

Another interesting counterargument with respect to the basic assumptions of RCT has been that of, who argues that the rational for the revealed preferences approach is based on the false idea that the only way of understanding a person's preferences is to examine his actual choices, with no choice-independent way

of understanding someone's attitudes towards alternatives. The complex psychological issues underlying choice and preferences have recently proved Sen correct, by leaving as an open question if all behavioural characteristics can be captured by RCT and the welfare-maximization approach, putting this theory's validity in question. However, for Sen, two essential characteristics of individuals should be introduced when analysing an agent's preferences and choices if we want our theory to be accurate: sympathy and commitment. Sympathy is present when a person's sense of well-being is psychologically dependent on someone else's welfare, while commitment is what makes an agent do or not do something based on what they belief is right or wrong, without making they personally better or worse-off, so not directly affecting their utility. Therefore, we can see that the basic links between choice behaviour and utility maximization embedded in RCT are severed as soon as commitment and sympathy are taken into account as elements influencing decisions [5].

From the analysis above we can see that many of the assumptions underlying RCT have been proved false, or, at least, not universally correct. This, in my opinion, is very relevant towards discussing the future of this theory and the role it should play in economic theorising and modelling, as its success as a normative and/or descriptive theory has been put at stake by more recent discoveries of agents' preferences and behaviour.

Furthermore, another relevant question to analyse with respect to RCT is that related to the feasibility of having a value-free RCT. RCT as a descriptive theory would be framed into positive economics, as it should be, according to Friedman, in principle, independent of any ethical position or normative judgements. However, RCT has also been treated as a normative theory, meaning that it has dealt with issues related to what agents should or ought to do and not just with descriptions or predictions about objective reality. For Friedman, RCT is part of positive economics, which can be an objective science in the same sense as any of the physical sciences. Theory would therefore be seen as having no substantive content and being just a set of tautologies, with the function of organizing empirical material and facilitating its understanding [2]. On the other hand, normative economics -of which Friedman doesn't consider RCT to be part-, would have a large input of value and ethical judgements and influence.

However, other authors don't fully agree with this interpretation, not just of RCT, but of positive and normative economics in general. Hausman thinks that economics can't be done in a value or ethics-free way, without this meaning that we can't differentiate between positive and normative economics. In this conceptual framework, positive economics would address factual questions whereas normative economics would address evaluative questions through positive inquiries into the logical presuppositions and practical means of achieving certain goals. This doesn't mean at all that positive economics wouldn't include ethical or value judgements. Many economists hold that positive economics and specially theories as RCT are value-free. However, this is clearly misleading, as saying that RCT is value-free would suggest that the conduct of the inquiry in its application is value-free, which it logically can't be as inquiring involves action and action is driven by values, according to Hausman. Values influence, for example, the construction of RCT and its assumptions, which influence answers that can be obtained through the application of this theory. Positive economics, and within it RCT, can't be independent from ethics and values as the construction of theories as RCT (including its assumptions and restrictions) and their application in economic analysis, necessarily require evaluative

judgement. Furthermore, to test the principles or assumptions of RCT it is required to examine their implications on the basis not just of their factual presuppositions and bit also the moral principles upon which they rely [3].

Other authors, as Julian Reiss go further by arguing directly against the fact/value separability thesis -which poses that factual judgements can be made independently of judgements of value-. According to Reiss, in the development of theories related to rational choice, economists necessarily make substantive normative assumptions related to preferences, constraints or behaviour, which is not value-free, as traditionally has been thought. There are two main reasons why value judgements necessarily enter modelling decisions, with the first having to do with the fact that there are indefinitely many ways in which a model can be constructed, but few of them will make the model useful for a particular descriptive or normative purpose, implying that value judgements would be involved when deciding on the characteristics of it or what we understand by "usefulness". Secondly, there exist trade-offs between the different purposes of a model -as in the case of RCT- and choosing between them requires value judgements from the researcher, not just in its construction but also in its application [4].

In conclusion, through this article we have seen that RCT depends mainly on axioms and assumptions about preferences, beliefs, and choice. However, with the advance of economics and the development of certain branches as behavioural economics, many of these assumptions have been proved false, or, at least, inaccurate, making RCT of difficult applicability to explain the behaviour of economic agents or make predictions about it. Therefore, we have seen that the veracity of assumptions of RCT is a necessary condition for its success both as a descriptive and normative theory. Furthermore, it has been shown that a value-free RCT is not possible, as value judgements are necessarily made, both in the construction and application of the theory.

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