

Bounded Rationality and Behavioralism: A Clarification and Critique

by

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Viewed as a morsel of economic rhetoric, the phrase “bounded rationality” cuts at the heart of neoclassical economics. The basic insight is certainly an appealing one. Humans are not computers who can solve instantly and costlessly the complex optimization problems the neoclassical theorist often assigns them. Notice, however, that, even though the discussion runs in terms of cognitive capacity, the catch-word tells us that it is “rationality” – not knowledge – that’s supposed to be bounded. It is clearly a much stronger poke at neoclassical theory to say that agents aren’t rational than merely to say that those agents have imperfect knowledge. To describe the agent’s dilemma as a boundedness of rationality thus suggests something about one’s conception of rationality. If it is “boundedly rational” to be unable to solve some complex, objectively specified problem (like winning in chess), then unbounded rationality must consist in precisely the ability to solve such problems (LANGLOIS [1986 b, 227]). This is an extremely strong conception of rationality, one that arguably confuses two issues: (1) the agent’s inclination to act in his or her best interest and (2) the level of the agent’s knowledge of and ability to achieve that interest.

The alternative would have been to see rationality as a more humble trait, one that, because of its very limitations, could still operate more-or-less unboundedly in the face of limited cognitive capacity and limited knowledge. Under this alternative formulation, the same agent may be (subjectively) rational even though mistaken, confused, or poorly informed about what, to an omniscient observer, would be in his or her best interests. The agent’s limitations may take the form of an inability to solve a complex optimization problem (even if few problems ever actually present themselves in this form), but such a limitation makes the agent not boundedly *rational* but boundedly *skillful*. Rationality, in this alternative formulation, is a matter of doing the best one can with what one is given, which includes one’s knowledge and information-processing abilities.

At some level, these two formulations are identical, their differences a matter of definition only. But definitions have rhetorical implications, and rhetoric has programmatic implications. If one chooses the weaker conception of rationality, one may be inclined to stick with something like the neoclassical program,

broadly and appropriately understood (more on which below). If, however, one chooses to see rationality as a strong concept (one virtually impossible to realize, almost by definition), then one may be inclined to insist on a new research program that doesn't rely on the rationality of agents. This is in effect what Herbert Simon and his followers did: they argued for a new program, behavioralism, in which the basic presupposition is not that an agent act reasonably given the circumstances he or she faces. In behavioralism – narrowly construed, at any rate – the agent is programmed to follow a simple rule of behavior, notably to “satisfice” rather than to optimize.

My argument is that this choice threw out the baby with the bath water.¹ The real culprit is not the method of neoclassical economics – correctly understood – but the misapplication of that method.

In order to make this case, I need first to make clear what I consider the “appropriate” method of neoclassical economics to be. In short, the answer is the method of situational analysis, an approach that goes back to the European tradition of Max Weber and Alfred Schütz and whose most notable recent adherent is probably Karl POPPER [1966], [1967]. Under situational analysis, one portrays the agent as merely acting reasonably under the circumstances he or she faces. It is the nature – the logic – of the situation that suggests the agent's best course of action. This has the effect of transforming the economist's problem from one of individual psychology to one of the philosophy of knowledge (BOLAND [1982]), even if the line between the two is sometimes blurry (LANGLOIS [1986 b, 234]). This method embodies a conception of rationality that is a good deal weaker than that implied in Simon's formulation. The idea of acting reasonably already suggests limited abilities – it has a “boundedness” built in.

What is the behavioralist alternative? As suggested in the early work of Herbert Simon and in more recent restatements (WINTER [1985]), behavioralism has both broad and narrow programmatic elements. At its broadest, behavioralism is a much-needed antidote to neoclassical modeling at its most stylized and Byzantine. In emphasizing a portrayal of the agent as he or she “really” behaves, the behavioralist is calling for a healthy empiricism, even if the rhetoric applied often lends itself to a naive inductivist interpretation. At a narrower level, however, the behavioralist program calls for a specific model of the agent. In these models – of which satisficing or “thermostat” behavior is the best-known example – the agent is a programmed robot that follows a simple rule of thumb. Thus it is no longer the logic of the agent's situation, but rather certain rules, asserted *ab ovo*, that determine the agent's behavior.

Before criticizing this program, let me first suggest that behavioralism is not the methodological alternative its rhetoric suggests. Both neoclassical and behavioralist practice actually cut across the methodological boundary that exists

¹ See LANGLOIS and CSONTOS [1990] for a fuller development of the argument this note outlines.

in principle between the two programs. Indeed, it is not at all far-fetched to make an attempt at reinterpreting part of the neoclassical program as behavioralism and a good deal of bounded-rationality modeling as situational analysis.²

(1) *Optimization as situational analysis.* It is clearly the case that *some* optimization models are examples of the method of situational analysis. That class of models has in common with the SA approach the ideas of constraint and optimization. In particular, most of the basic and simple models of textbook marginalism probably do qualify as situational analysis.

(1') *Optimization as behavioralism.* It does not follow from this that *all* neoclassical models fit best into the SA category. Situational analysis insists that the agent act not *optimally* but merely *reasonably* under the circumstances. Indeed, to act optimally – from the point of view of an omniscient observer – is often to act quite *unreasonably*. Behavioralists and other critics have pointed out relentlessly the narrow-mindedness or even straightforward irrationality of an agent actually trying to solve a foot-long Lagrangian as a guide to action. As a consequence, and more to the present point, it is not at all clear that we should classify such optimization models as situational analysis. Solving a complex optimization problem is an easy task for a computer: it is a matter of following an algorithm, programmed in much the same way one could program satisficing behavior or rule-following. Why not call these behavioralist – that is, programmed-agent – models? Solving a huge optimization problem may be a lousy decision procedure; but it *is* a decision procedure.

(2) *Rule-following as behavioralism.* It is also the case that some models of rule-following behavior fit quite naturally under the rubric of behavioralism. Although following rules and habits does not necessarily imply completely preprogrammed behavior, neither does it imply carefully considered behavior. Moreover, just as people do not choose their habits, they do not choose some of the rules they follow. These latter form a background of institutions against which the agent chooses. Models of behavior following such “ground-rules” seem to be consistent even with a very narrow conception of behavioralism.

(2') *Rule-following as situational analysis.* On the other hand, one might also easily construe the following of a rule as a reasonable response to particular decision situations. If, as behavioralists like to imagine, the situation is uncertain and complex, following a rule may well be the agent's most reasonable course of action. Following the advice of Simon and others, a number of writers have looked to psychology to understand better the nature and sources of the rules agents follow. What turns out to be crucial in this work is, in effect, the importance of the *situation* in which the agent operates. HEINER [1983], [1986], for example, derives rule-following from the complexity of the environment: it

² The next few paragraphs follow LANGLOIS and CSONTOS [1990].

is literally the agent's only choice when competence is low relative to the complexity of the situation. Similarly, for psychologists (TVERSKY and KAHNEMAN [1974]; KAHNEMAN and TVERSKY [1981]), the heuristics people use under uncertainty depend critically on the particular facts of their situations: how they frame the problem is the clue to their biases and their decision-rules.

And herein lies the core of my brief against behavioralism (narrowly construed) and in favor of situational analysis. Like many (perhaps most) readers of this journal, I have an interest in the New Institutional Economics (LANGLOIS [1986 a]). The principal object of this program is the study of social institutions, which can sometimes be seen as rules of behavior. Thus the goal of New Institutional Economics is often to explain the following of rules. But the behavioralist program narrowly construed – e.g., satisficing – assumes rule-following from the start. It does not inquire *as part of the logic of the program* into where the rules come from. This is precisely why the rhetoric of behavioralism insists on the importance of observation, almost to the point of inductivism: the program has no underlying theory of rule-following.³ Thus, despite its focus on human behavior, behavioralism in the end fails to connect rule-following with more fundamental principles of human behavior, namely the reasonable behavior of a non-automated real-life human with bounded knowledge and cognitive abilities.

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³ That is to say, no theory that isn't implicitly an instance of situational analysis.

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