

# Behavioral economics: from advising organizations to nudging individuals

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## Abstract

This paper starts from a distinction between “old” and “new” behavioral economics. The former is associated with, amongst others, a Carnegie group around Herbert Simon and a Michigan cluster led by George Katona. The roots of the latter may be traced to the work of especially Amos Tversky and Daniel Kahneman. Concerning the former, the paper illustrates how it emerged out of an interest in organizational policy. Regarding the latter, the paper argues that it serves as a natural input for policy concerning individual decision making. The returning theme is that behavioral economics serves as inherent inspiration for policy proposals.

**JEL Classification:** B3; D01; D03; L29

## Keywords

old and new behavioral economics — (bounded) rationality — organizational behavior — nudging

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## Introduction

Behavioral economics along with its focus on the interrelations between economics and psychology is attracting increasing attention and recognition (Sent, 2004; Heukelom, 2014; Frantz et al. 2016). There are two reasons for this.

The first is that mainstream economics has evolved. Whereas elegant mathematics had left little to no room for messy psychology (Camerer, 1999; Laibson and Zeckhauser, 1998; Mirowski, 2002), new space for psychological insights was created when mainstream economics encountered mathematical difficulties, especially in general equilibrium theory. These facilitated not only the incorporation of psychological insights overall, but also encouraged efforts to integrate some bounded rationality in particular into mainstream (Sent, 2004). To be sure, this did not involve a move completely away from mathematics.

The second reason for the increased attention and recognition concerns the fact that behavioral economics itself has evolved as well. That is, a distinction between “old” and “new” behavioral economics can be made. Old behavioral economics is associated with, amongst others, a Carnegie group around Herbert Simon and a Michigan cluster led by George Katona (Earl 1988). Partly due to its explicit efforts to distance itself from the mainstream, old behavioral economics never caught on in economics “proper”. The roots of new behavioral economics may be traced to the 1970s and the work of especially Amos Tversky and Daniel Kahneman, but also Baruch Fischhoff, Paul Slovic, and others (Camerer, 1999; Kahneman and Tversky, 1974; 1979; Kahneman, Slovic, and Tversky, 1982; Laibson and Zeckhauser, 1998; Rabin, 1996; Tversky and Kahneman, 1987). Kahneman and Tversky

started from the rationality assumption that has characterized mainstream economics and next analyzed departures from this yardstick, as opposed to developing an alternative one. Indeed, Colin Camerer (1999) noted:

This sort of psychology provided a way to model bounded rationality which is more like standard economics than the more radical departure that Simon had in mind. Much of behavioral economics consists of trying to incorporate this kind of psychology into economics. (p. 5)

Following up on this distinction, the remainder of the paper will first illustrate how old behavioral economics emerged out of an interest in organizational policy. Next, it will elaborate a problem of mainstream economics in addressing individual economic decision making. This is followed by the argument that new behavioral economics is a natural input for such policy. The returning theme is that behavioral economics serves as an inherent inspiration for policy proposals. Being of a relatively brief and introductory nature, this paper does not aim to offer a complete or exhaustive overview of the rich history of behavioral economics. We do, however, seek to set most prominent foil, against which to understand discussions regarding behavioral economic policy making.

## Old behavioral economics and organizational policy

The original purpose of behavioral economics models was to characterize the effects of a restricted rational agent on the assumptions (and conclusions) of economic and administrative

theory. These models have significantly influenced, directly and indirectly, theories of organizations (see Cyert and March, 1963). Organizations are viewed as devices, alternative to the market, by which individuals acting with incomplete knowledge and information can satisfactorily reduce their uncertainty and take their decisions. At the same time, the bounded rationality of the members of the organization restricts their ability to achieve optimality in the pursuit of their goals. As a result, old behavioral economics sees organizations as setting targets and looking for alternatives that satisfy those targets, rather than trying to find the best imaginable solution. The typical administrator will follow rules-of-thumb to consider only those solutions that will satisfy reasonable goals with as few complications as possible. Furthermore, she will attend to goals sequentially, rather than simultaneously. With their focus on organizations, these theories and observations on decision making have been applied to the systems and techniques of planning, budgeting, and control that are used in designing organizational policy.

Subsequent research has both expanded and distorted the insights of the early behavioral economics theorists concerning organizational policy. Mainly through Williamson's (1975) insistence, the notion of bounded rationality has played a prominent role in transaction cost economics. Williamson sought to link the idea of conflict of interest with the idea of information limitations and saw organizational forms as implicit or explicit solutions to the problems of decision and control created by opportunism and bounded rationality. Opportunism refers to the fact that there is conflict of interest within, as well as between, organizations, and that participants in an organization will lie, cheat, and steal in their own self-interest if they can. Bounded rationality makes complete contracting infeasible because not everything can be known and there are limits to the capabilities of decision makers for dealing with information and anticipating the future. However, Williamson was reluctant to accept the notion of satisficing, primarily because he thought it would denote irrational behavior. Thereby, he made his work more palatable to the mainstream who might envisage contractual choices in terms of the subjective utility model. At the same time, Simon himself considered satisficing to be a direct implication of bounded rationality.

Although Williamson makes bounded rationality a key issue in relation to potential for market failure, he does not carefully distinguish between information processing problems (as with contracts that are too complex to understand or keep in one's memory) and founded imagination (failures to envisage what could go wrong with a transaction, especially if would be opportunists can think more creatively about devious ruses to exploit the limits of what is in the contract). While the former is from Simon's line of thinking, albeit with the contrast just elaborated, the latter comes from Shackle's work (Earl and Littleboy, 2014). However, while Williamson did refer to Shackle in passing, he never seemed to bring out clearly these different cognitive sources of contractual problems.

An approach similar in spirit to transaction-cost economics,

but one that gives much smaller weight to limited rationality, as opposed to conflict, is found in agency theory. As these ideas have been taking shape, attention to bounded rationality has tended to fade into the background, and attention to conflict of interest has become paramount. What they share, however, is a focus on corporate policy.

Nelson and Winter's (1982) evolutionary theory of business firm growth brought new impulses to behavioral economics modeling of organizational policy in economics. It emphasizes differential survival as a primary basis for changing populations of firms, and sees firms as being selected upon by virtue of their fit to the environment. Nelson and Winter stressed the inability of firms to carry out the necessary calculations for optimization, because the firm will not "know" all the things of which it is capable, because all future contingencies cannot be foreseen, because mistakes can be made, and so forth. In Nelson and Winter's view, the notion of satisficing can account for persistence of routines in their evolutionary theory. The theory uses two key concepts. The first is the idea that organizations develop, stabilize, and follow routines. The second is a conception of search. Differential outcomes from search result in differential rates of survival and growth in firms. These differences, in turn, affect the distribution of activities and interactions at the industry level. The emphasis on the historical path by which organizational forms are achieved found echoes in a number of other developments such as research on path dependence.

As the preceding discussion has argued, the focus of old behavioral economics was on organizational policy with little interest in day-to-day decision making by individuals. At the same time, especially mainstream macroeconomists desiring to make policy recommendations starting from the perspective of individuals encountered serious difficulties, as elaborated in the next section. In a sense, as subsequently clarified in section four, this created space for the move of behavioral economics towards the domain of individual decision making, parallel to the move from old to new behavioral economics.

### Mainstream macroeconomics and microfounded policy recommendations

The Carnegie group in old behavioral economics also included John Muth, who introduced the rational expectations hypothesis as an illustration of the rationality implicit in theories of bounded rationality and of the bounded rationality implicit in theories of rationality (Sent, 2002). Subsequently, rational expectations models have been used as a vehicle for making recommendations for improving policy decisions starting from microfoundations (Sent, 1998). The presumption is that the behavior of private agents is purposeful and optimizing, while that of government agents is arbitrary. This asymmetry then leaves scope for suggesting improvements.

Now, making recommendations for improving policy amounts to assuming that in the historical period the system was not really in a rational expectations equilibrium, having at-

tributed to agents' expectations about government policy that did not properly take into account policy advice (Sargent, 1984). This is because a rational expectations model during the estimation period ought to reflect the procedure by which policy is thought later to be influenced, for agents are posited to be speculating about government decisions into the indefinite future. Moreover, making the assumption that in the historical period the system was in a rational expectations equilibrium raises a question of why we study a system that we cannot influence, for if this procedure is not thought likely to be a source of persuasive policy recommendations, most of its appeal vanishes. Indeed, there is a logical difficulty in using a rational expectations model to give advice, stemming from the self-referential aspect of the model that threatens to absorb the economic advisor into the model. That simultaneity is the source of logical difficulties in using rational expectations models to give advice about government policy.

Bounded rationality appears to offer a way out, though. For why would government agents be smarter than others? Making government agents just as boundedly rational as the agents in behavioral economics models may offer an opportunity for making policy recommendations possible (Sargent, 1993). And this brings us to the next phase, which is the focus of new behavioral economics on individual behavior (as opposed to the focus on organizations by old behavioral economics). New behavioral economics serves as a natural input for policies that address individual behavior, as elaborated in the next section.

## New behavioral economics and nudging individuals

New behavioral economics arose from the work of psychologists such as, first and foremost, Daniel Kahneman and Amos Tversky (e.g. Heukelom, 2014; Kahneman and Tversky, 1979, Camerer and Loewenstein, 2004, Kahneman, 2011). Its principal advocate within the economics discipline was Richard Thaler, a business economist with a PhD from the University of Rochester. Starting with Thaler's "Towards a Positive Theory of Consumer Choice" (1980), and based on the work of Kahneman and Tversky, Thaler argued that individuals systematically and predictably deviate from the rational norms as assumed and implied by economic theory).

From the start new behavioral economics was partly defined in opposition to the market-oriented experimental economics of Vernon Smith, Charlie Plott and others (e.g. Svorenčík and Maas, 2015; Svorenčík, forthcoming). While experimental economists such as Vernon Smith and Charlie Plott in the 1960s and 1970s set up experiments to design markets that steer fallible, but self-interested behavior of individuals to an efficient equilibrium more effectively, behavioral economists such as Richard Thaler, Colin Camerer, and George Loewenstein from the 1980s onwards argued that because individuals are boundedly rational, no such equilibrium could be obtained. Even though this position was usually deemphasized for fear of being accused of producing partisan politics, it was obvious

that behavioral economics worked in a liberal, Democratic tradition, and experimental economists in a conservative, Republican one (Heukelom, 2012).

The next step new behavioral economists took was to investigate how they –as experts on individual decision making– may induce individuals to behave more in accordance with those rational norms. Yet it was not until the mid 1990s that this additional line of new behavioral economics began to emerge. The reason, perhaps, is that the very idea of systematic and predictable deviations had to be established in the first place.

Thaler's, and thus new behavioral economics' first policy program was Saving More Tomorrow (SMarT), a program that sought to induce (American) employees into saving more for their retirement by increasing the amount saved with every raise in salary, thus avoiding the problem of reducing net wages when increasing retirement savings. Other examples of new behavioral economics-inspired attempts to make individuals behave more rational include the E.U.'s ban on pre-ticket boxes for online purchases, and U.S. fuel economy labels (Behavioraleconomics.com). Theoretically, this extension of new behavioral economics into government policy was organized under the heading of, first, Libertarian Paternalism (Thaler and Sunstein, 2003), and later, more famously, Nudging (Thaler and Sunstein, 2008; also see Waterson, 2004). It speaks to the influence of this line of research that while Thaler and Sunstein in the first edition of their book *Nudge* in 2008 felt compelled to explain to their partly non-native audience the meaning of the word "nudge", by the mid 2010s nudging had become a household concept and approach in many areas outside of economics and the English-speaking world<sup>1</sup>.

Government policy inspired by new behavioral economics became institutionalized first with the creation of the Behavioural Insights Team (BIT) by British prime minister David Cameron in 2010. The aim, initially, was in line with new behavioral economic research of the previous twenty years: to contrast all British laws and regulations with the empirical evidence of humans' boundedly rational psychology. Inspired by the success of the BIT, similar government policy institutes were set up in other countries and institutions, including the U.S. and the E.U. (Time.com, ec.europe.eu). In addition, research from the mid 2000s onwards by among others Sendhil Mullainathan, began to emphasize the use of behavioral economics for understanding questions of development economics, and generally of helping the poor, also in developed countries. (Mullainathan, Bertrand, and Hanna, 2010; Mullainathan and Shafir, 2009). As a result, institutes such as the World Bank began to employ new behavioral economics for solving social problems such as poverty, early child development and health in developing countries (World Bank, 2015).

<sup>1</sup> (e.g. <http://www.nudge.nl>, <http://www.nudgefrance.org/nudgechallenge/>, <https://www.dpmmc.gov.au/domestic-policy/behavioural-economics>; Thaler, 2015).

Also the economic crisis of recent years gave new impetus to behavioral economics (Heukelom and Sent, 2010). This is due to the fact that the onset of the crisis can be traced back to the bounded rationality of policy makers, thereby resonating with the lessons drawn from the failure of making policy recommendations within the rational expectations framework. For, recall that the previous section concluded that making government agents just as boundedly rational as the agents in behavioral economics models may offer an opportunity for making policy recommendations possible.

In particular, the actions of policy makers were myopic, focusing on the potential short-term gains, while neglecting the negative long-term repercussions. Jimmy Carter, Bill Clinton, and George W. Bush and their Community Reinvestment Act (CRA) stimulated subprime mortgages. That is, the CRA was adopted under Jimmy Carter in 1977 and forced banks to provide mortgages to risky minority groups. In 1995 this law was modified under Bill Clinton. Expanded in 2002, George W. Bush further stimulated the issuing of mortgages for minority groups so they could live the American Dream. However, when the circumstances changed, this turned into an American nightmare for both home owners and banks.

Moreover, under the leadership of Alan Greenspan the American central bank conducted a far too loose monetary policy with negative long-term repercussions. In an effort not to burst the bubble, huge amounts of money were pumped into the economy. Some of that money eventually made it to the U.S. subprime market. In his focus on the short run, the loose money policy seemed like a good idea, but in the long run the bounded rationality of this effort had devastating results. Also the Chinese policy makers were myopic in systematically keeping the value of their currency low. This created a trade surplus in China, which led to an inflow of large reserves of U.S. dollars that were subsequently invested in U.S. treasuries. This kept American interest rates systematically low, thereby reinforcing the loose monetary policy of the U.S. central bank. Again, this seemed like a good short-run strategy, but eventually led to a destruction of the value of the assets held by China.

In sum, what the policy prescriptions that followed from new behavioral economics share is a desire to induce, or nudge, people into acting more in accordance with neoclassical theory. In addition, new behavioral economic policy is best understood as a set of (liberal) policies that offer ways to engineer higher social welfare for situations in which the market partly fails.

### Closing comments

The subdiscipline of behavioral economics goes back to the 1950s and 1960s research of, among others, Simon, Cyert, and March. This “old” behavioral economics deviated from the behavioral foundations upon which mainstream economics was based, both as a descriptive and as a normative theory of economic decision making. Despite Simon’s Nobel Prize in 1978, however, old behavioral economics had only modest

impact on the mainstream of the economics discipline. At the same time, the “new” behavioral economics that began to emerge in the 1980s and 1990s initially did not always appear as attractive as the axiomatized certainties of neoclassical economics. Yet, more and more economists began to embrace one form or another of bounded rationality from the 2000s onwards. In contrast to old behavioral economics, new behavioral economists’s models of bounded rationality owe their revival mostly to attempts to strengthen neoclassical economics, be it as a normative theory instead of as a descriptive one.

Both old and new behavioral economics have been policy oriented. But while old behavioral economics focused its research and (occasional) advice mostly on the level of the organization, new behavioral economics takes the individual as point of departure—as consumer, employee, voter, or otherwise. For both old and new behavioral economics there does not appear to be a preferred channel for the behavioral advice. Reports for governments, popular books, and business consultations are used depending on the occasion. What these show is that behavioral economics is a natural input for policy recommendations.

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