

Extending the theoretical lenses of behavioral economics through the sociological prisms of Gary Becker

Morris Altman^{1*}

Abstract

Becker stands out as a Godfather of conventional economics because of his reliance on prices, income, and rationality as a means of analysing and predicting choice behaviour. He also accepts, for modelling purposes, the assumption that individuals make decisions after considering the consequences of these decisions. Hence, there can't be any regret. But Becker also maintains that traditional economics is flawed, often generating highly misleading analytical predictions. However, he rejects the heuristic and biases approach to behavioral economics which he equates to a psychological approach to economic issues, focusing on irrationality in decision-making. Instead, Becker introduces key sociological variables as core determinants of choice, taking us well beyond the traditional economic focus on price and income. In this approach to modelling, choice behaviour is rational or sensible and smart. One need not revert to referring to behaviour that can't easily be explained by prices and income as biased or irrational. Becker also recognizes the importance of individuals' preferences changing through their interactions with their socio-economic environment. I argue that Becker's approach to decision-making contributes to enriching a behavioralist approach to modelling choice behaviour. It is particularly well situated in the approach to behavioral economics taken by Simon, which was heavily interdisciplinary, going well beyond psychology and economics, who also challenged a narrow economic understanding of the determinants of choice behaviour. I argue for a modelling framework that integrates aspects of Becker's research through a critical assessment of his contributions.

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¹ *University of Newcastle*

***Corresponding author:** morris.altman@newcastle.edu.au

Introduction

Why would anyone in their right mind consider an important aspect of Gary Becker's research to represent a potential and significant contribution to behavioral economics? Becker is, of course, one of the founding-fathers of the rational choice approach to contemporary price theory and neoclassical economics. In Becker, one finds an unbending focus on prices and income as the default approach to explain and predict human behavior. Moreover, the realism of the modeling assumptions are not of any consequence. Prediction is what's critical to judging the validity of the model, irrespective of how unrealistic the modeling assumptions might be, based on the methodological approach advocated by Friedman (1953). However, Becker significantly modified traditional theory, taking it well beyond traditional price theory.

Yet, surprisingly little attention is paid in the behavioral economics literature to the contributions Gary Becker (Becker 1996; see also Coleman 1993) has made to expanding and deepening the analytical modeling capability of price theory

by better embedding it in the reality of individuals' decision-making environments, which should incorporate their social environment. Becker berates traditional price theory for ignoring the fact that individual decision making is significantly affected by its relationship to others in their community. I argue that Becker's sociological intervention in economic modeling, consistent with the big tent approach to behavioral economics, is an important contribution to developing models that are better grounded in the reality of the human condition. This can contribute to better predictive models and to models that can provide a more robust causal narrative as compared to narrow price theory as well narrow behavioral economics, where the latter places an undue emphasis on psychological variables underlying human decision-making.

In this article, I will model Becker's contributions into a 'big tent' behavioral economics framework. Examples will be provided on how Becker's sociological variables improve our capacity to understand human decision making. Moreover, I'll discuss how this broader analytical framework sits with the notion of the rational decision maker. Finally, I'll address

some limitations of this modeling framework when situated in the standard neoclassical model (with its embedded assumption of perfect foresight) and how these shortcomings can be quite easily addressed by further modifying the neoclassical or traditional economic model.

What is behavioral economics

To understand how one might situate Becker's sociological intervention within the framework of behavioral economics it is best to first get a handle on what actually is behavioral economics. This question is not as simple as it first appears and is subject to debate (Altman 2017a, 2017b; Berg and Gigerenzer 2010; Tomer 2007).

Some economists argue that since economics is about behavior (decisions), all economics is behavioral economics. But this is a very simplistic view. Behavioral economics was developed in response to what many academics believed was a serious gap in theory, which focused on human behavior through the lenses of price theory wherein individuals were expected to behave mechanically in a particular direction as relative prices and real income change.

One very important perspective on behavioral economics, its most recent incarnation, is vested in Kahneman's and Tversky's (1979; Kahneman 2003) (two psychologists') heuristics and biases approach to human decision-making. This perspective maintains that the standard neoclassical model, predicating one's understanding of decision-making on price theory (narrow neoclassical theory), is wrong-headed. It fails to describe average human behaviour and might even fail to predict such behaviour. The neoclassical benchmarks might be correct as a measure of optimal, rational, and unbiased behaviour; but human decision-makers do not have the capabilities (which can't be learnt) to behave optimally. We tend to deviate, often quite significantly, from neoclassical behavioral norms. We are not neoclassical agents. The heuristics and biases approach is largely grounded in psychology with strong leanings towards aspects of neuroscience.

Upon this modeling framework is built the nudging approach to decision-making, with significant impact on policy (Thaler and Sunstein 2008). Humans are regarded as being hardwired towards making sub-optimal decisions from an individual welfare maximizing perspective. In other words, individuals tend to make decisions that are not in their own best interest. And even if such individuals believe they are making decisions that are in their own best interest, they are often wrong in this conclusion. Hence individuals need to be nudged towards making the correct decisions (sometimes very softly and non-intrusively—soft paternalism—and other times using very explicit rules and regulations with penalties and even coercion—hard paternalism. This nudging is led by professional nudgers, referred to as choice architects, who know better than we do, what's in our own best interest. Overall, human decision-makers, left to their own smarts, tend to be biased, sub-optimal, and even irrational in their behavior.

Herbert Simon developed the bounded rationality approach

to what became known as behavioral economics beginning in the 1950s. Simon (1959, 1978, 1987) introduced a much broader understanding of rationality and model building. First his understanding of rationality is more consistent with social science writ large, as opposed to the narrow definition articulated in traditional economics. Simon, and others working on this approach to behavior economics, largely at Carnegie-Mellon University at this time, assume that people are rational although sometimes limited by their capacities. They make decisions based on their physiologically, socially, and institutionally determined decision-making capabilities. These variables set bounds to individuals' decision-making capabilities and, given these capabilities, they do well enough to achieve their goals, yielding what Simon refers to as satisficing behavior. Overall, one can argue that individuals are smart in their behavior, even though they might make errors in decision-making. Moreover, given the reality of human decision-makers, behaving according to neoclassical behavioral norms might generate decisions that are welfare reducing to the individual. Individuals would be better off engaging in satisficing behaviour (Berg and Hoffrage, 2008), and the societies comprised of satisficers may be able to achieve greater levels of social welfare (Berg and Gigerenzer, 2007). In this sense, neoclassical behavior would be, in many if not most instances, irrational and sub-optimal.

Simon and others that work in the bounded rationality tradition, argue that one needs other benchmarks for optimal behavior, rooted in the reality of human decision-making, such as procedural rationality. Here, one aspect of determining rationality is whether given the objective one sets for oneself, one is using the best procedure to achieve ones' stated objectives. But even here, a decision might be subject to error, based on one's knowledge and decision-making capabilities. A smart agent might still make mistakes and choose incorrect procedures to achieve her stated objectives. Moreover, the 'rationality' of a decision is also based on the decision-making capabilities of the individual and this person's decision-making environment. And these two factors would be quite different across individuals and over time. In this modeling framework, the human decision-maker does not behave, for good rational reasons, in a neoclassical fashion.

In the bounded rationality approach to model building and analysis, the realism of ones' simplifying assumptions are critically important as well. In a word, to get our explanations correct and go beyond correlation analysis, one must have a model that correctly identifies those independent variables that most likely impact upon one's dependent variable. A core problem with economic models is its focus on prediction with little concern about the realism of the underlying modeling assumptions (inclusive of physiological, psychological, institutional, neurological, and sociological). The bounded rationality approach is differentiated by its focus on causation. It is only by developing models whose behavioral underpinnings (modeling infrastructure) is robust that one can move from correlation to causation and have benchmarks for rational-

ity, for being smart, for making optimal decisions, that make sense for the human decision-maker and distinguish between errors in decision making from delusional decision-making processes and related choices.

The beckerian intervention

Becker's (1996) critique of conventional economic theory is that it's too narrow in some of its modeling assumptions. Hence, many of its predictions are wrong and one gets the impression that individuals tend to be irrational simply because they are deviating from traditional economic norms. But these norms are misspecified. Becker's theoretical intervention is, therefore, well situated with Simon's concern that traditional economic theory misspecifies many critical modelling assumptions. One vital concern for Becker, with respect to contemporary behavioral economics, is that if someone does not make choices consistent with traditional economic theory one arbitrarily assumes that they are irrational or persistently biased as opposed to seeking something much more specific to this type of residual or ad hoc presumptive analysis. Becker does not deny, however, that at times, individuals can be systematically biased.

Traditional economics, in effect suffers from an important omitted variable problem, ignoring key non-economic variables, which if introduced into one's economic model, would improve the predictive power of the model and would also make sense of what appears to be irrational or persistently biased behavior (see also Altman 2006).

Becker (1996, 3-4) observes critically that: "The economist's normal approach to analyzing consumption and leisure choices assumes that individuals maximize utility with preferences that depend at any moment only on the goods and services they consume at that time". And, there is the related focus on relative prices and income. Becker retains this traditional economic modeling core in his analysis. Although not always crystal clear, this appears to be central to what Becker refers to an individual's metapreferences (which he assumes are identical across all decision makers). It is the personal and social capital that serve to differentiate individuals' choice behavior. But Becker maintains that the traditional approach, which relies on price and income and the individual's choices being formed and executed as if the individuals resided in a hermetically sealed box, are simplifying assumptions that can't explain or predict important aspects of human behavior.

One shortcoming of this approach is (Becker 1996, 3-4): "... that these preferences are assumed to be independent of both past and future consumption, and of the behavior of everyone else." And this becomes problematic when (Becker 1996, 3-4): "... a large number of choices in all societies depend very much on past experiences and social forces". Becker maintains that these two variables need to be incorporated into the modelling of choice behavior. Becker (1996, 3-4) emphasizes that his revision of conventional microeconomic theory:

"... retains the assumption that individuals behave so as to maximize utility while extending the definition of individual preferences to include personal habits and addictions, peer pressure, parental influences on the tastes of children, advertising, love and sympathy, and other neglected behavior".

Becker extends the preference function of the individual to incorporate sociological variables. What prices and income can't explain, sociological variables might. Or, a combination of price, income, and sociological variables might do a much better job of explaining than the traditional economic variables alone. Becker regards these variables as being structurally important, as opposed to psychological variables which he regards as being used in an ad hoc manner—if people aren't behaving as predicted by traditional economic theory then one attributes this to some psychological variable.

Filling in the gaps: restoring rationality with a broader modeling framework

Becker maintains his commitment to the prior assumption of most economists that individuals (the economic agent) behave in a rational manner. But Becker acknowledges that much of the behavior, decision-making, choices, of economic agents appears to be inconsistent with rational behavior as defined by traditional economics because the utility function is specified too narrowly, excluding own and others' past consumption and investment in human capital, broadly defined. But this is only because traditional economics omits some key variables that impact on the decision-making process and on the choices of rational economics agents.

Gary Becker (1996, p. 23) argues that rational behavior can be simply defined in terms of "forward-looking, maximizing and consistent choices". We have a form of broadly-defined intelligent behavior. Of course, for Becker, his type of intelligent behavior yields different preferences and choices depending upon the social circumstances that the individual finds him or herself in. Hence Becker writes: "Psychologists and others in recent years have placed great emphasis on these cognitive limits on individual "rationality" (see, e.g., Kahneman and Tversky, 1986, or Akerlof, 1991). Such cognitive imperfections are sometimes important, but in recent years they may have received excessive attention at the expense of more significant weaknesses in standard models of rational choice for explaining behavior in real, as opposed to experimental, situations".

According to Becker (1996, 22) a key weakness with the traditional mode is that: "These models typically assume that preferences do not directly depend on either past experiences or social interactions". Becker argues that (1996, 22): "childhood and other experiences, and the attitudes and behavior of others, frequently place more far-reaching constraints on choices than do mistakes and distortions in cognitive perceptions". For this reason, Becker does not emphasize cognitive

imperfections in his analysis (1996, 22), "but rather the influence of personal and social capital on choices. Preferences and constraints [such as budget constraints] no longer have independent influences on behavior since personal and social capital are constraints that operate through preferences".

Becker regards the focus on irrationality by many behavioral economists and economic psychologists as relying on ad hoc exogenous explanations of choice behaviour.

Becker attempts to endogenize what appears to be aberrant behaviour by introducing additional constraints to the conventional modeling framework. This, in effect, locates and introduces important omitted variables. This search for rationality when there are appearances to the contrary and the related search for a model that has greater 'explanatory' power, sits well with Herbert Simon's and the Carnegie School of behavioral economics' efforts to transform economic analysis.

The similarities between Simon's and Becker's approach to choice behavior are quite important because they relate to:

- the assumed rationality or sensibility or smartness of the decision-maker.
- the importance of the realism of assumptions to modeling the decision-making process.

James March (1978, a close colleague of Simon) argued that rationality can't be defined and modeled outside of the context of the decision-making environment and the decision-making capabilities of decision makers. He also argued that we should make the prior assumption that human choice behavior is typically sensible (smart). Otherwise, we miss the reality that humans typically make the effort to behave smartly; and one can argue this is one reason for the survival and great success of the human species of the past thousands of years. Becker revises economic theory to determine if we can make rational sense of many aspects of choice behavior that might otherwise appear to be irrational. March writes (1978, p. 589): "Engineers of artificial intelligence have modified their perceptions of efficient problem solving procedures by studying the actual behavior of human problem solvers. Engineers of organizational decision making have modified their models of rationality on the basis of studies of actual organizational behavior. . . . Modern students of human choice behavior frequently assume, at least implicitly, that actual human choice behavior in some way or other is likely to make sense. It can be understood as being the behavior of an intelligent being or group of intelligent beings. . . .". Becker argues that introducing important sociological variables (more realistic assumptions) allows one to make sense of what might otherwise appear to be irrational behavior.

A variation on human capital with a serious sociological twist

Gary Becker's point of focus is introducing what he refers to personal and social capital into his modeling of choice

behavior. These two variables are omitted in the traditional modeling and does not play a part in the most recent renditions of behavioral economics.

Becker introduces (Becker 1978, 4):

- Personal capital (P), "includes the relevant past consumption and other personal experiences that affect current and future utilities".
- Social Capital (S), "incorporates the influence of past actions by peers and others in an individual's social network and control system" –this incorporates the effects of a person's social milieu, which incorporates cultural attributes. Also, the individual's social capital stock (S) depends largely "on the choices of peers in the relevant network of interactions". Individuals have less choice over S than over P.
- P and S as part of the individual's human capital stock.
- and S affect future productivity, hence helping to explain variations in productivity across individuals.

Becker assumes that individuals invest in P and S with an eye to the future. This is especially the case of P. Hence, current behavior (choices) can increase future personal capital, or this capital may fall over time because of psychological and physiological "depreciation" due to the effects of past behavior. The capital stock in the next period equals the formation of personal capital this period plus the undepreciated portion of the capital from this period. The same would be true of social capital. Hence the evolution of P and S over time can affect choices and thereby income, life expectancy, morbidity, addiction, happiness, amongst other socio-economic outcomes.

Becker assumes that individuals are forward looking and should be forward-looking. He therefore assumes that all choices are derived from a forward-looking perspective. He also assumes that, "forward-looking persons recognize that their present choices and experiences affect personal capital in the future, and that future capital directly affects future utilities. Then current choices depend not only on how they affect current utility, but also on how they affect future utilities". (Becker 1978, 7). Although this is Becker's assumption, not assuming forward-looking agents (i.e., very high rates of time discount) does not override the importance of introducing of P and S in the modeling of choice behavior. One can retain Becker's sociological intervention without assuming that individuals, even rational individuals, are forward looking. Not being forward looking can result in errors in decision-making and regret. But these need not be irrational acts. Moreover, one can argue that the extent to which an individual is forward looking can be affected by P and S. Hence errors in decision making and regret can be mitigated by changing P and S. The importance of P and S in affecting forward looking behavior is outside of the parameters of the traditional economic

model as it is with behavioral economics models articulated by Kahneman and Tversky, for example.

Becker's revised model maintains the importance of price and income in determining choice. But now past experience (P) and social context (S) also influence choices given price and income. Irrespective of Becker's view about our ability to choose the level of P and S, this should not distract us from recognizing the importance P and S in determining choice given price and income. For Becker, this broader theory helps us better predict choice behavior. Also, even if choices deviate from rational choice behavior from the perspective of traditional price theory, introducing P and S can help explain why such seemingly irrational behavior is actually rational. Utility maximizing individuals can behave quite differently, *ceteris paribus*, simply because of differences in P and S.

A Beckerian preference function could take the form of:

$$\text{Choice} = f(\text{price}, \text{income}, P, S). \quad (1)$$

The introduction of P and S is not arbitrary. Rather, it is based on an understanding of how decision-making is affected by particular sociological variables.

The traditional preference function in neoclassical economics takes the form of:

$$\text{Choice} = f(\text{price}, \text{income}). \quad (2)$$

There is the implicit assumption here that other behavioral variables are not important to a robust causal analysis of choice behavior.

Akerlof and Kranton: Identity economics, a footnote

It is important to recognize that after Becker's theoretical intervention, Akerlof and Kranton (2010) developed a sub-set of price theory, which they refer to as "identity economics". Here, individuals' choices are affected by the identity they choose to take on which, in turn, serves to maximize their utility or level of wellbeing. Identity choice is related to minimizing the extent of cognitive dissidence given the social environment within which the individual lives and works. Once an identity is chosen this affects other choices individuals make, given prices and income (see also Davis 2011).

Some possible implications of Becker's behavioral model (not all of the below are Becker-sanctioned)

Without relying on psychological variables one might be able to more systematically and realistically model and explain various choices behaviors, by adding personal and social capital into the traditional economic preference function.

- Individuals might or might not become drug addicts or become alcoholics.

- Individuals might or might not join gangs and engage in related criminal activity.
- Individuals might or might not invest in human capital stock that would increase their chances of success in the legal market economy, as parents, as neighbours.
- Consumer's current purchases are affected by P and S.
- Tastes for discrimination or for equity and social justice are affected by P and S.
- Preferences to invest in children (quality of kids) are affected by P and S.
- The extent of overconfidence or underconfidence can be affected by P and S.
- The extent of altruism and fairness can also be affected by P and S.
- Public investment in S can increase labor productivity, make firms more productive, and reduce structural unemployment.
- Low P and S can generate a rational culture of poverty that might be reversible by investment in S.
- Individuals' interactions with their environment can change their preferences in a rational manner. For example, policy reducing discrimination and forcing or inducing the mixing of men and women, blacks and whites, individuals of different ethnic or religious backgrounds can flip discriminatory preferences towards empathetic preferences.

Becker's modeling also allows for regret as a rational outcome of decision-making. This is the case, even as he assumes forward-looking decision making. For example, true preferences or desired preferences might be different from individuals' actual preferences. Individuals might not prefer the preferences that they have, and might therefore regret the choices these preferences generate. Becker (1996, 20-22) argues that individuals' inherited personal and social capital, "...constrains their utility maximizing choices, no matter how much they may regret the amount and kind of capital they inherited from the past. Their utility would be lower, perhaps much lower, if their 'desired' preferences alone guided choices". Becker (1996, 20-22) maintains that if individuals are unhappy with their actual preferences, they may not shift to their desired or true preferences if it is too costly to do so. Hence, for addicts to be helped (if this is their desire), for example, the overall costs of being 'cured' need to be lowered, which can be impacted by investments in S. Individuals will act to realize their true preferences once they are known and the institutional preconditions for actualizing their true preferences are in place. People regret their choices whilst not wanting to change their choices given P, S, relative prices, and income (related to their ability to make preferred choices in

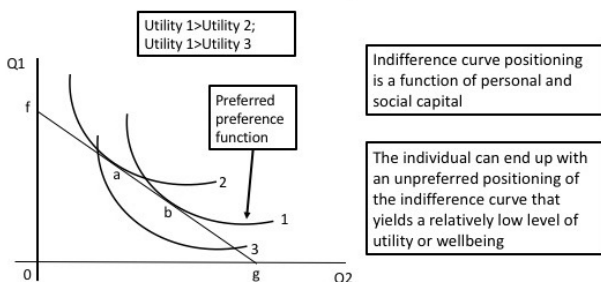
spite of the costs of so doing). But individuals are not forever locked into sub-optimal choices. Given Becker’s modeling, investment in S by society at large can provide the decision-making environment to facilitate individuals’ realizing their true preferences.

Preferences and personal & social capital: an illustration

One way of illustrating Becker’s contribution to behavioral economics is through a simple utility/relative price/income diagram (Diagram 1). Given relative prices and income the indifference curve would be in a different position depending on P and S. And one might be on an indifference curve (IC) that did not represent one’s true preferences, given by IC 1. One can be at IC 2 or 3. But one’s utility curve can shift for the better (or for the worse) though changes in P and S. This could yield a higher level of utility or wellbeing to Becker’s utility maximizing individual. Moreover the shape of an individual’s indifference curve can also change (its elasticity) with change to P and S. All these indifference curves are consistent with rational behavior given prices, income and P and S.

Figure 1. Diagram 1

Preferences & Personal & Social Capital: An Illustration



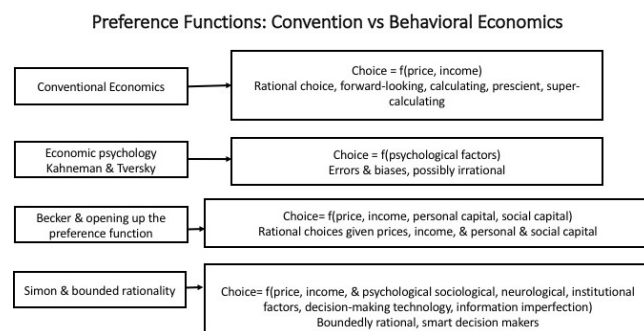
Conclusion

Becker’s introduction of personal and social capital into the modeling of the economic agent enriches economic theory and is consistent with a bounded rationality-smart agent approach to behavioral economics. It adds predictive analytical power to current economic models. It furthers the objective of the behavioral economics approach developed by Herb Simon that the realism of modeling assumptions is of critical importance to build robust models. From this perspective prices and income are not the only key variables that explain choice behavior.

One can place the Beckerian twist in the context of other modelling frameworks. This is done in Diagram 2. The traditional choice model focuses on prices and income and Becker’s expands this utility maximizing model to incorporate two key sociological variables which he refers to as personal

and social capital. Much of contemporary behavioral economics is rooted in the economic psychology of Kahneman and Tversky wherein psychological variables are introduced to help to better describe and explain choice behavior which is shown to be in violation of the norms of traditional economic theory. Such behavioral is often regarded as persistently biased and error-prone and even irrational. Often economic variables are not of importance in this modelling scenario. In the bounded rationality approach, there is a broader tent of variables inclusive of economic, psychological institutional, and sociological. But Becker adds considerable specificity to the sociological space, adding analytical rigour to the behavioral model. In both the bounded rationality approach and in Becker’s economics plus sociology approach one would expect smart decision-making to dominate, albeit choices can be sub-optimal (and not the preferred choices) because of the decision-making environment and the decision-making capabilities of the economic agent.

Figure 2. Diagram 2



Accepting Becker’s perspective on rationality and relatedly of forward looking behaviour is not necessary for Becker’s sociological intervention in economic theory to apply. Although Becker assumes that individuals can choose their levels and type of personal and social capital, this need not be the case. And, Becker’s analytical toolbox also suggests pathways for improvements to decision-making, facilitating the realization of individuals’ true preferences by institutional interventions in the economy to improve individuals’ decision-making capabilities and their decision-making environment.

References

Altman, M. (2006). “Opening-up the objective function: choice behavior and economic and non-economic variables—core and marginal altruism”. *Economics Bulletin* 4. Available at: <http://economicsbulletin.vanderbilt.edu/2006/volume4/EB-06D00022A.pdf>.

Altman, M. (2012). *Behavioral economics for dummies*. New York: Wiley.

Altman, M. (2017a). “A bounded rationality assessment of the new behavioral economics”. In R. Frantz, S.H.

- Chen, K. Dopfer, F. Heukelom and S. Mousavi (eds), *Routledge Handbook of Behavioral Economics*. New York: Routledge, pp. 179-94.
- Altman, M., editor (2017b). *Handbook of behavioural economics and smart decision-making: Rational decision-making within the bounds of reason*. Cheltenham, England: Edward Elgar.
- Becker, G. (1958). *The economics of discrimination*. Chicago: University of Chicago Press.
- Becker, G. (1996). *Accounting for tastes*. Cambridge and London: Harvard University Press.
- Berg, N. (2003). "Normative behavioral economics". *Journal of Socio-Economics* 32, 411-427.
- Berg, N. (2014). "The consistency and ecological rationality schools of normative economics: Singular versus plural metrics for assessing bounded rationality". *Journal of Economic Methodology* 21(4), 375-395.
- Berg, N. and Gigerenzer, G. (2007). "Psychology implies paternalism?: Bounded rationality may reduce the rationale to regulate risk-taking". *Social Choice and Welfare* 28(2), 337-359.
- Berg, N. and G. Gigerenzer (2010). "As-if behavioral economics: Neoclassical economics in disguise?". *History of Economic Ideas* 18: 133-166.
- Coleman, J.S. (1993). "The Impact of Gary Becker's Work on Sociology". *Acta Sociologica* 36, 169-178.
- Davis, J.B. (2011). *Individuals and Identity in Economics*. Cambridge: Cambridge University Press.
- Friedman, M. (1953). "The methodology of positive economics". In M. Friedman, *Essays in positive economics*. Chicago: University of Chicago Press, pp. 3-43.
- Kahneman, D. and Tversky, A. (1979). "Prospect theory: an analysis of decisions under risk". *Econometrica* 47: 313-327.
- Kahneman, D. (2003). "Maps of bounded rationality: Psychology for behavioral economics". *American Economic Review* 93: 1449-1475.
- March, J.G. (1978). "Bounded rationality, ambiguity, and the engineering of choice". *Bell Journal of Economics* 9: 587-608.
- Thaler, R.H. and Sunstein, C.R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. New York: Penguin Books.
- Simon, H.A. (1959). "Theories of decision making in economics and behavioral science". *American Economic Review* 49: 252-83.
- Simon, H.A. (1978). "Rationality as a process and as a product of thought". *American Economic Review* 70: 1-16.
- Simon, H.A. (1987). "Behavioral economics". In J. Eatwell, M. Millgate, and P. Newman, eds., *The new Palgrave: A dictionary of economics*. London: Macmillan.
- Tomer, J.F (2007). "What is behavioral economics?". *Journal of Socio-Economics* 36: 463-479.