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Normative behavioral economics

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Abstract

This paper addresses the question of why, in spite of its recent success, behavioral economics does not influence most discussions about how economic policy ought to be made. Failing to penetrate into contemporary discourse on leading policy issues is a serious problem, because behavioral techniques often point to policy prescriptions that are at odds with the prescriptions which follow from models using more standard behavioral assumptions. By comparing how the universe of possible policy implications changes when different methodological approaches are used, this paper demonstrates a systematic link between methodology and the range of policy prescriptions that can be socially desirable. Because of this link, the methodological multiplicity of behavioral economics, and the ideological pluralism which it supports, favor the use of normative behavioral economics. This follows from the basic economic principle of diversification: a policy prescription that reflects averaging over a number of distinct kinds of errors (one for each methodology) is less likely to wander far off target than one generated by a single method.

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1. Introduction

Many economists may have doubts about the ultimate value of research in the subfield of economics known as “behavioral economics,” but few would disagree that a “behavioral revolution” has taken place over the last 15 years. Although this “revolution” does not carry all the markings of a full-fledged shift of paradigm in the sense of Kuhn (1970), there is

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abundant evidence that the normal science currently practiced by neoclassical economists incorporates behavioral techniques that would have stood out as unusual just a decade ago.¹ Most convincing on this point is the fact that a number of major themes in behavioral economics, e.g. examining the empirical validity of behavioral assumptions, modeling non-maximizing behavior by firms and consumers, and borrowing from psychology, sociology and cognitive science, now comfortably fit into most major journals in economics.²

This newly won attention, although it reflects a substantive achievement for those who advocate the use of behavioral techniques in economic research, has yet to see the insights of behavioral economics coalesce into a normative framework for analyzing economic policy (Knetsch, 1995).³ Reaching the imagination of policy makers and influencing popular debate about leading issues in public policy is, admittedly, not the only measure of an intellectual movement's success. Still, it is puzzling, at least on the face of it, why the recent ascent of leading behavioralists into the limelight has not been accompanied by a new normative framework for analyzing policy.⁴

In fact, some of the most well-known behavioral economists explicitly warn their readers not to draw normative inferences from their work. Thaler (1991, p. 138), for instance, makes the following assertion about his own work on the empirical validity of rational choice axioms: "A demonstration that human choices often violate the axioms of rationality does not necessarily imply any criticism of the axioms of rational choice as a normative idea. Rather,

¹ Schwartz's (1998) book, *Rationality Gone Awry*, provides a general survey of behavioral economics with citations of a number of major journal articles using behavioral techniques as well as older edited volumes intended to represent the practice of "behavioral economics." Schwartz's work provides abundant evidence, including citation frequency statistics and accounts of behavioral economics in newspapers and popular non-academic journals, backing the claim that behavioral economics has recently captured a greater share of attention relative to other subfields within economics.

² One might contend that the mainstream economics literature has long included within it a debate about the meaning of "rationality" and the appropriateness of maximization as a model of how consumers and firms behave, citing the paradoxes of Allais (1953), Ellsberg (1961), or the provocative work of earlier authors such as Veblen (1899), Keynes (1936), Hayek (1945), Duesenberry (1949), or Galbraith (1958). Of course, in a more detailed historical account of the emergence of behavioral economics, the work of Richard Cyert and Herbert Simon in the 1950s and 1960s would be featured prominently in the story of behavioralists who made a "big impact." The claim being made here is simply that a recent accumulation of empirical work on anomalous price patterns in financial markets (Thaler, 1993), and heightened interest in the experimental results of authors such as Tversky (see Laibson and Zeckhauser, 1998), Smith (2000), and Camerer (1997), have led to an unprecedented level of attention being devoted to the themes of behavioral economics.

³ Important exceptions to this include policy-oriented discussions of *x*-efficiency such as Leibenstein (1979), Schwartz (1969), and Altman (1996); Katona's (1980) work on policy-related macroeconomic forecasting using attitude survey questions; Frank's (1985) models of optimal income re-distribution with other-regarding preferences; Maital (1986) on the possibility that imperfect credit markets may impose welfare-improving constraints; Schelling's (1984) enumeration of policy problems relating to "self-command"; Tomer's (1986) work on organizational capital; Akerlof and Dickens (1993) on cognitive dissonance and forced retirement savings programs; Frantz's (1992, 1997) application of *x*-efficiency to the problem of regulating a natural monopoly; Scitovsky's (1998) description of how recent political events interconnect with the trend toward irrationally engaging in too little self-cultivation; Altman's (1999a) analysis of welfare-enhancing policy changes ruled out by neoclassical assumptions; Altman (2000) on labor policy; and George's (2001) normative analysis of advertising and meta-preferences.

⁴ In a note to the author, Hugh Schwartz confirmed the apparent reluctance of behavioralists to apply their work to solving policy problems. As evidence, he cited a recent phone call from a reporter at *Business Week* trying, without much luck, to get a "behavioral perspective" on specific policy issues from leading behavioral economists.

the research is simply intended to show that for descriptive purposes, alternative models are sometimes necessary.” Continuing this discussion of what behavioral economics implies about the use of rationality axioms in normative analysis, Thaler (1991, p. 138) argues that the major contribution of behavioral economics has been the discovery of a collection of “illusions,” completely analogous to optical illusions. Thaler interprets these “illusions” as unambiguously incorrect departures from the “rational” or correct way of making decisions. Thaler is explicit in accepting neoclassical axioms of individual preferences (e.g. transitivity, completeness, non-satiation, monotonicity, and the Savage axioms which guarantee that preferences over risky payoffs can be represented by an expected utility function) as his normative ideal when he writes: “It goes without saying that the existence of an optical illusion that causes us to see one of two equal lines as longer than the other should not reduce the value we place on accurate measurement. On the contrary, illusions demonstrate the need for rulers!”

Yet, in showing that human decisions contradict the predictions of expected utility theory, there is no analog to the straight lines of objectively equal length. Unlike the simple geometric verification of equal lengths against which incorrect perceptions may be verified, the fact that human decisions do not satisfy the axioms underlying expected utility theory in no way implies an illusion or a mistake. Expected utility theory is, after all, but one model of how to rank risky alternatives. Those who insist that traditional theory is a wholly complete basis for normative analysis in spite of systematic departures from this theory in the empirical record, in effect, assert that behavioral economics is a purely descriptive field of inquiry. This perspective, in turn, implies that the full range of possible policy conclusions to be drawn from the empirical record against neoclassical behavioral assumptions consists of nothing more than a call for better training in the logic of existing models of choice.⁵

Thaler’s own work illustrates the possible inadequacy of this non-normative interpretation of behavioral economics by generating results that seem to have interesting policy implications at odds with those of standard models. When, for example, Kahneman et al. (1986) provide evidence that decision makers do not maximize, it is highly unlikely that optimal policies developed from maximization models continue to be optimal. For instance, the incentive-compatibility constraints faced by a public official pondering how to raise revenue to cover the cost of providing a public good will be less constraining if consumers do not maximize, since those constraints assume that citizens extract personal benefits at the public’s expense to a greater degree than actually occurs. This means that the policy maker has more latitude than previously thought.

In another paper, Thaler (1980) argues that consumers are relatively unresponsive to exogenous changes. This descriptive result would seem to argue against policy interventions which depend on a high degree of sensitivity to individual incentives, and in favor of policies whose primary drawback stems from the consequences of a public that is forward-looking and keen to adjust to changes in incentives. Surely, Thaler’s result is germane to debates about whether small revisions in marginal income tax rates can be expected to boost a country’s labor supply (which underlies the idea of “tax cuts that pay for themselves”).

⁵ Raiffa (1994) advances this point of view explicitly, insisting that unambiguous normative models of decision making exist (such as expected utility theory) and therefore should be taught widely in order to correct the irrationality of the masses.

Thaler's results on unresponsiveness also appear to challenge another important normative concept, the Lucas critique, which played a significant role in justifying the economic policies of Margaret Thatcher and Ronald Reagan. If forward looking behavior plays only a minor role in influencing current decisions, then the idea of using monetary and fiscal stimulus to increase aggregate demand is not as vulnerable to criticism based on rational expectations and Ricardian equivalence.

In yet another example, the work-horse of applied normative economic research, *cost-benefit analysis*, seems to have its meaning altered by Kahneman et al.'s (1990) fascinating demonstration that people require very high payoffs to be induced away from the status quo. If, by usual measures, a proposed policy change leads to a net benefit, this alone may not justify the new policy, owing to the unaccounted psychic costs of adjusting away from the status quo. Economists doing cost-benefit analysis (taking preferences as exogenously given) would presumably want to respect the finding that average preferences are reference point-dependent and, therefore, recommend fewer changes in policy.

In addition to noting what appears to be an abundant supply of unexplored normative implications in the descriptive behavioral economics literature, other rationales for asserting that normative behavioral economics is potentially worthwhile seem to be emerging. One such rationale stems from a relatively new strand in the behavioral economics literature focusing on decision environments in which anomalous behavior leads to surprising social benefits. That is, systematic "mistakes" can have pro-social consequences in certain contexts.

Dekel (1992) provides a model in which individuals who have inflated beliefs about the relative value (in terms of increasing one's chance at surviving) of the food that they own are objectively better off in food-bargaining situations than individuals who correctly understand how nutrition maps into survival probabilities. In Dekel's model, the deluded individual benefits from an improved bargaining position that rests on the individual's reputation for being an irrationally tough bargainer. A similar story in Kyle and Wang (1997) features financial market participants who sometimes benefit from their own distorted beliefs. Berg and Lein (2002) illustrate how overconfidence improves liquidity in certain settings, actually leading to a Pareto improvement (relative to perfect rationality) by reducing transactions costs enough to offset the personal cost of holding distorted beliefs. And Bernardo and Welch (2000) construct a cascade environment where distorted beliefs lead individuals to strike out on their own rather than "follow the herd," providing a socially beneficial "informational externality." This emerging line of work stresses the connection between rationality (or adaptiveness) and specific environments, drawing on the tradition of studies such as Winter (1988) and Nelson and Winter (1982) in which neoclassical behavior does not always win against behavioral alternatives. Seen in this light, behavior that does not satisfy the neoclassical axioms, including beliefs about the world which are incorrect, cannot easily be interpreted as aberrant, or labeled "irrational," since such behavior is (in certain decision environments) net welfare-improving relative to neoclassical "rationality."

The message that context matters, a commonplace in most branches of the social sciences, seems to be controversial in economics, which has traditionally viewed the axiomatic approach and its concomitant priority on generalizability as an important indicator of its substance (and superiority). Paying attention to context, however, and acknowledging that different types of behavior work well in different settings leads one to conclude that the

meaning of “rationality” derives from specific environments and is not always amenable to universal or axiomatic construction. This kind of context dependence complicates the policy maker’s task by requiring more detailed knowledge of environmental and behavioral particulars so that concepts such as “rationality” and “efficiency” are well-defined.

Thus, the success of descriptive behavioral economics alongside an apparent consensus against normative behavioral economics presents a conundrum. Here we have a substantial category of research emerging into prominence, the key findings of which are positioned to be orthogonal, i.e. unrelated, to nearly every interesting policy debate on which the question of economic behavior may bear. In this anti-normative appraisal, behavioral economics, although it accepts a broader vision of how firms and consumers actually behave, does not actually challenge *homo economicus* as the proper ideal for assessing how legal and cultural institutions should be designed. This paper addresses the question of whether the anti-normative view is correct.

2. Normative neoclassical economics versus normative behavioral economics: are the policy implications different?

For the sake of comparison, it is useful to recall the standard ground rules for doing normative economics using the neoclassical approach. First, fix (i.e. hold constant) preferences, technology and the decision-making environment (including all relevant institutional detail). Next, describe the behavior of consumers and firms as a (continuous) function of prices—the function that maximizes each agent’s objective given any price vector. Then, impose adding up constraints, i.e. equate demand and supply, to obtain equilibrium prices as a function of exogenously given parameters (call them θ) some of which are under the policy maker’s control. At this point, decide how to aggregate utility into a social welfare function. Finally, declare a particular policy θ_1 to be an improvement over the status quo θ_0 if and only if social welfare under θ_1 (after prices have fully adjusted to the new equilibrium) is greater than it was under (the equilibrium associated with) θ_0 .

Referred to hereafter as “normative neoclassical economics,” this paradigm deserves to be acknowledged as a well-designed tool for answering a large class of problems. The creativity demonstrated by post-war economists in composing themes and variations based on it is truly remarkable. The intent of this article is not to diminish the importance of this paradigm. Rather, the intent is to challenge the assertion that normative neoclassical economics is the *only* solid basis for saying what policy makers ought to do. Pointing out that normative neoclassical economics is not a universally applicable tool should not be read as an attack. Rather, it is a call for a pluralistic, multi-tooled approach to trying to do what most readers surely want—to get policy right!

I will try to show that normative neoclassical economics, like any other singular tool, systematically guides policy analysis in certain directions rather than others. Understanding the systematic connection between one’s analytical tool, i.e. one’s method, and the range of policy conclusions that are possible, will emerge as a critical component in the argument for normative behavioral economics. Therefore, the following section attempts to analyze the neoclassical tool’s systematic tendencies, by comparing those tendencies with the normative tendencies of leading behavioral methods.

But what is a “behavioral method?” In order to avoid having to commit to a “once and for all” definition, one can instead opt for an empirically driven “characterization,” that identifies behavioral economics with a list of key techniques which are clearly associated with it.⁶ Below is just such a list, the purpose of which is to make a series of comparisons that contrast the set of policy prescriptions that are possible when using different techniques of analysis.

Following a general description of each of six core techniques in behavioral economics, I try to point out how each technique can lead to a policy implication that is ruled out by the standard neoclassical technique. The point is to tie methodology to policy implications. I argue that methods (i.e. techniques of analysis), whether they be neoclassical or behavioral, are idiosyncratic by nature and exhibit inherent systematic tendencies. The following comparisons attempt to demonstrate how the universe of possible policy prescriptions is shaped by the techniques one uses.

A corollary to this demonstration is that multiple methods—using a toolkit of approaches for understanding economic phenomena and making normative claims—is highly desirable. The claim that multiplicity is “desirable” follows from the principle of diversification: in averaging over imperfectly correlated errors (one for each method or “tool” considered), the composite tool of analysis (the “portfolio,” or “toolkit”) is more precise than a single tool is. In essence, this corollary says that a policy prescription reflecting the multiple techniques of behavioral economics is less likely to wander far off target. Therefore, the comparisons below constitute an argument in favor of normative behavioral economics.

2.1. Theoretical modeling with behavioral assumptions that are less stringent or different from those of neoclassical economics

This approach is the behavioral technique most similar to neoclassical economics. Beginning with strong assumptions about the objectives and constraints faced by decision makers (as in neoclassical theory), all relevant decisions are given a mathematical representation and, after solving for a decision rule that determines each agent’s action as a function of exogenous parameters, the aggregate consequences of the model are characterized. Using this technique, a number of behavioral phenomena can be studied, such as bounded rationality (decision costs), time inconsistency (non-exponential discounting), other-regarding behavior (reciprocity), incorrect beliefs about random variables (e.g. overconfidence), and reference point-dependent preferences (status-quo effects). The chief virtue of this approach is that, by modifying a single element at a time, the connection between behavioral assumptions and the predictions of otherwise familiar economic models is easy to see.

Examples of this technique include Cyert and March’s (1988) analyses of firms that pursue objectives other than profit-maximization: Loewenstein and Prelec’s (1992) model

⁶ Actual definitions of behavioral economics appear in Gilad and Kaish (1986), Gilad et al. (1986), Simon (1986), Caldwell (1986), Earl (1988), and Maital and Maital (1993). These authors’ characterizations of what behavioral economics is all about overlap to a remarkable degree and succeed in identifying several themes which distinguish behavioral economics from other styles of economics. Those distinguishing themes are: the empirical validity of assumptions; the possibility of “irrationality”; using multiple approaches to understand behavior; and multi-disciplinarity.

of time inconsistency; Altman's (1996) analysis of how welfare economics changes when workers are assumed to work more efficiently at higher wages; Rabin's (2000) model of familiar decision problems incorporating biased perceptions of probabilities; and Sethi and Somathan's (2001) work exploring the consequences of other-regarding behavior in equilibrium theory.

2.1.1. Example (food label warnings)

A theoretical model built on the behavioral assumption of bounded rationality can arrive at a conclusion which is impossible in the standard neoclassical framework regarding the question of whether the government should require food producers to label high-cholesterol foods with an explicit warning about the health consequences of a high-cholesterol diet. In a perfect-information neoclassical world where food products already state the quantity of cholesterol in food products, and where the statistics relating daily cholesterol consumption to illness are readily available, warning labels should have no influence on the decisions consumers make. The labeling proposal would impose real costs on food producers, but yield no benefits in terms of lowering healthcare outlays. Therefore, the neoclassical model favors no new labeling. On the other hand, if I can only keep six facts in my mind simultaneously, and the marginal benefit of filling one of those six slots with cholesterol statistics on any given day is small, then the labeling scheme (by forcing a relevant fact to the front of my consciousness at the time of purchase) may drastically alter my food purchases. According to the behavioral model, the labeling proposal may be a good one.

2.1.2. More examples (forced savings, taxing positional goods, teaching maximization to MBAs)

Three more examples illustrate how theoretical behavioral models can favor policies that are difficult to motivate using neoclassical behavioral assumptions. Time-inconsistency captures a number of persistent problems of will-power, i.e. the inability to execute the plans one makes for oneself, that can justify state imposition of mechanisms such as a social security program (forced retirement saving). Other-regarding behavior may justify taxes on "positional goods," or other programs designed to mitigate against the overconsumption of status-improving goods. And models of x -efficiency in which firms do not always reduce profits by paying a higher wage clearly show that lawmakers have a role to play in helping pick which equilibrium path the economy is to take.

2.2. Empirical tests of competing behavioral hypotheses

2.2.1. Laboratory experiments

Given a list of competing theories of individual behavior, each with falsifiable implications, it is sometimes possible to design laboratory experiments to rule out some or all of the candidate theories. By shrinking the set of admissible theories, this type of empirical work essentially accepts the project of falsification (in the tradition of Popper, 1934), seeking to converge toward a more accurate understanding of the objective world via a process of elimination.

2.2.2. Field data

The goal here is the same as in laboratory experiments: use the data to rule out theories and thereby further a process of convergence toward a small (possibly singleton) set of explanations for a particular phenomenon. In analyzing field data such as macroeconomic time series and large, public-use panel data sets, behavioral economics draws on the techniques of standard econometric analysis. The key challenge in this area is to somehow tie the unobserved world of decision processes to observable variables, and test claims about behaviors that are not always directly observable.

Tversky and Kahneman (1992), Thaler (1997), Camerer (1997), Smith (2000), and Guth et al. (2001) are among the most prominent experimentalists conducting empirical tests of behavioral theories. Rabin and Schrag (1999), Constantinides (1990), and De Bondt and Thaler (1990) are examples of empirical studies that test behavioral theories using field data.

A wide class of problems in neoclassical applied econometrics applies the following methodology: assume consumers choose x to maximize $u(x; \theta)$ such that $g(x; \lambda) = 0$; estimate θ and λ ; if θ is a policy variable, and $du(x^*; \hat{\theta})/d\theta$ is greater than the cost of one additional unit of θ , then recommend making θ higher.

The behavioral economist, perhaps drawing on laboratory experiments, from surveys, or from in-depth interviews (in the tradition of anthropologists and ethnographers), may argue that consumer behavior is better described by the function $x^{**}(\theta)$ rather than the neoclassical model's $x^*(\theta)$. With entirely different derivations of the behavioral rule ($x^{**}(\theta)$ versus $x^*(\theta)$), there is no reason for these functions to respond similarly to θ . Thus, the predicted effects of policy change may very well be different: $du(x^{**}; \hat{\theta})/d\theta < 0$ is quite possible, reversing the earlier policy recommendation.

2.2.3. Example (“talking up” aggregate demand to smooth the business cycle?)

A real-business cycle macroeconomist who understands recessions as the result of an exogenous shock to the aggregate supply curve recommends a hands-off policy approach.⁷ With this supply-side diagnosis of a recession, efforts to change the money supply or the emotions of consumers (both of which would affect the aggregate demand curve) are ineffectual for purposes of effecting real economic variables. In effect, the supply-side analysis asserts that the derivative of equilibrium output with respect to policy variables is zero. A behavioral macroeconomist in the tradition of George Katona, on the other hand, views consumer sentiment as an independent variable that can and should be targeted for

⁷ Of course, not all neoclassical economists subscribe to the tenets of real-business cycle theory. Still, the consumer-sentiment approach of Katona remains recognizably distinct from the work of most contemporary Keynesian macroeconomists whose methods often include use of “the representative consumer,” rational expectations, expected-utility maximization, and long-run equilibrium. It is true that, by embedding additional factors into the neoclassical framework, e.g. costly price adjustment, Keynesian macroeconomists can produce models with policy implications similar to those of behavioral economists. Similarly, behavioral economists are quite capable of arriving at policy conclusions that overlap with those of real-business cycle proponents, depending on which method is selected from the behavioral methods “toolkit.” Therefore, there is not a one-to-one correspondence between methods and policy implications. The relationship is instead “many-to-one,” whereby different methods can map into the same policy implication. Nevertheless, there is a relationship. And because there is a systematic connection between the two, the choice of analytical method really does matter: selecting certain methods over others points systematically to some, rather than other, policy prescriptions.

policy intervention. It is interesting to note that the administration of American President George W. Bush has adopted an implicitly behavioral point of view with its efforts to “talk up” the demand curve, encouraging consumers to spend and be optimistic.

2.3. *Borrowing from psychology, sociology, cognitive science, political science, psychology, anthropology, and philosophy to analyze outstanding empirical puzzles in economics*

Multi-disciplinarity is a prominent theme in behavioral economics.⁸ Although some have looked at how economic ideas can be incorporated into other disciplines, multi-disciplinarity, as a technique in behavioral economics, typically involves grafting a concept or theory from another discipline onto an established economic model.

Maital and Maital (1993) makes a number of arguments in favor of judiciously mixing elements of psychology and economics. Rabin (1998) surveys the subject of psychology and economics, focusing heavily on Tversky and Kahneman constructs such as loss aversion and the status-quo effect. Etzioni (1988) calls for a blend of normative sociology and positive economics which he refers to as socio-economics. Maki (2001) and McCain (1998) analyze a number of important issues in philosophy and economics. Posner (1998) examines the consequences of apparently irrational behavior for the multi-disciplinary subject of law and economics. And Hoch and Loewenstein (1991) use a number of results from cognitive science to underpin their study of reference point-dependent preferences in consumer purchase decisions.

2.3.1. *Example (reducing crime)*

Neoclassical economists who write about crime often frame the problem of reducing crime as that of setting the penalties and the probabilities of getting caught high enough so that rational criminals will be dissuaded from misbehaving (because they anticipate more disutility than benefit). A psychologist well-versed in the study of systematically distorted beliefs may agree with the neoclassical economist’s general approach, yet disagree about the specific numbers, arguing for far higher penalties and intensity of enforcement (because potential criminals systematically underestimate the probability of getting caught). And a criminologist who studies the interaction of environmental factors and crime rates may recommend that policy makers target something altogether different than penalties and intensity of enforcement.

2.3.2. *Example (recycling in Dallas)*

In considering how to encourage more recycling in Dallas, TX, the neoclassical economist, accustomed to assuming relative uniformity across time and space may recommend whatever policy has worked most often in other cities. On the other hand, the multi-disciplinary economist, perhaps working together with an anthropologist or geographer, is more apt to

⁸ Of course, there are numerous examples of neoclassical economists engaged in multi-disciplinary research programs. Thus, the generalization here, and the distinctions between neoclassical and behavioral economics made elsewhere in this paper, are admittedly imperfect. I argue nonetheless that there is a recognizable difference based on the frequency and degree to which behavioral economists rely on the methods categorized here as “behavioral.”

consider the unique regional characteristics of Dallas, trying to design a set of incentives specifically geared toward that city's residents.

2.3.3. *Example (public art)*

In considering spending on public art and cultural events, a behavioral economist with ties to sociology can provide arguments that link shared experiences and collective enterprises such as city festivals to tangible economic benefits. The resources that go into such projects, when viewed as investments in "community capital" with the potential to enhance goodwill in the business community and reduce contracting costs (e.g. reduce cheating), may turn out to be wise investments. In contrast, it is difficult to use neoclassical theory to argue that the benefits from these projects outweigh the inefficiency implied by planners choosing how to spend taxpayers' money.

2.4. *Interviews and case studies*

To aid in ruling out existing theories and to provide raw material for formulating new theories, carefully executed interview studies and case studies that compare findings about actual behavior with the behaviors assumed to prevail in neoclassical economics represent a core technique within behavioral economics. [Bewley \(1999\)](#) studying downward wage rigidity, [Schwartz \(1987\)](#) providing empirical insights into the efficiency of actual firms' decisions, and [Schwartz's \(forthcoming\)](#) case study of a development-policy success story in Brazil, are notable examples of how the interview technique is used in behavioral economic analysis.

2.4.1. *Example (inflation targeting)*

Interview-based behavioral analysis provides the key rationale underlying most central bankers' current practice of setting inflation targets strictly above 0%, e.g. between 2 and 3%. In a neoclassical world, where prices adjust quickly (meaning that some workers experience a declining real wage), there is little to be said in favor of inflation, and much to be said against it. On the other hand, if firms and workers have a tacit agreement to almost never cut nominal wages (as behavioral economists who interview firms and consumers have confirmed is actually the case), then the price rigidity of the real wage and its attendant inefficiencies are inescapable at a zero inflation rate. In this case, the interview methodology leads to a sharp policy implication: that inflation rates should be high enough to allow real wages to adjust downward without cutting nominal wages.

2.5. *Policy analysis comparing the implications of different hypotheses about behavior*

A distinctly behavioral approach to policy analysis with at least some precedence in the behavioral economics literature involves focusing on a particular policy problem, comparing the policy implications of several potentially relevant behavioral models, and critically analyzing the extent to which those models' assumptions are likely to hold in the case under consideration. This empirically-guided technique of "searching in a space of possible behaviors" stands in stark contrast to the essentially deductive neoclassical technique of assuming a fixed, exogenously given objective.

Macroeconomic forecasting and policy analysis using attitude surveys in the manner of: [Katona \(1993\)](#); [Altman's \(1999b\)](#) study of family planning and development policy using a growth model in which men and women's preferences may differ; and [Schwartz's](#) (forthcoming) consideration of how closely different behavioral assumptions actually adhere to the facts, are examples of this approach.

2.5.1. Example (incentive-compatibility constraints and admission pricing at the Dallas Museum of Art)

The problem faced by those charged with the challenge of regulating access to a public good illustrates how this kind of behavioral analysis of policy can overturn neoclassical policy positions. Whereas neoclassical models suggest the importance of designing pricing schemes that can withstand a population of individuals doing their best to “screw the system” (formally communicated as “incentive compatibility constraints”), behavioral economics can generate a wider set of feasible policy alternatives by considering alternative motives (some of which are pro-social, or perhaps are supported by cultural norms which can induce self-regulation away from the “screw the system” strategy).

For instance, admission to the Dallas Museum of Art is free on the first Tuesday of every month, and every Thursday during certain hours. If viewing art on Tuesday is a good substitute for viewing art on Wednesday, then a “kitchen sink” neoclassical model would probably predict ticket revenue on Wednesday to fall off sharply, due to a strong substitution effect. According to the representatives of the Dallas Museum of Art I spoke with, however, Wednesday revenues, although never spectacular, actually rose after the current price policy was implemented. In fact, ticket takers at the museum report that a number of attendees insist on making a donation (paying the price of admission) even when it is free. This behavior, perhaps surprising to some, might actually be predicted by a behavioralist. A behavioral economist could cite several reasons why free admission on Tuesday would not hurt ticket sales on Wednesday: individuals may not plan leisure-time consumption very far into the future; they may not be very sensitive to changes in museum ticket prices; due to inertia, attendees may tend to stick with past patterns of attendance; and Dallas art-goers might value reciprocity, showing some concern about “doing their part” to support art.

2.6. Simulation and evolution

Simulation is a versatile technique with a wide variety of applications. It is particularly well-suited to studying heterogeneity and, therefore, for doing economic analysis without the extreme homogeneity assumptions characteristic of other techniques. The focus of many simulation studies is the *emergence* of certain behaviors and the systematic connection between types of environments (determining which behavior gets rewarded) and types of preferences or cognitive processes (determining who survives). Simulation can suggest how certain preferences arise as selective traits in a larger space of preferences, thereby generating hypotheses about where first principles come from. Computer simulation uses complex structure and high dimensionality to help vivify one's imagination and provide answers where formal analysis is too difficult.

Herbert Simon pioneered the use of simulation (see [Rubinstein, 1999](#) or [Simon, 1972](#)). The work of [Axelrod \(1984\)](#) studying reciprocity, and [Gigerenzer and Todd \(1999\)](#) exploring

the question of which kinds of environments support fast and frugal decision-makers over maximizers, are prime examples of the simulation technique.

2.6.1. Example (teaching economics students that smart guys sometimes act nice)

What undergraduate textbooks teach students of economics is itself a normative economics issue. If generations of young people are taught that “rationality” means becoming *homo economicus*, e.g. taking all the hors d’oeuvres from the tray when there is little risk being caught, then surely this has real effects on the way in which the economy works. The simulation and evolution literature has demonstrated a wide range of environments in which pro-social behavior, such as cooperation, reciprocity and altruism, is “smart” in a very real, bottom-line sense. Teaching this part of the economics literature more prominently to undergraduates is potentially important if one worries about the evolution of culture and believes that academic institutions play a role in the “fitness function” that filters tomorrow’s winners from the losers. This role is considerably diminished as soon as one attempts a neo-classical analysis of what should be taught in undergraduate economics courses. Adopting the neoclassical approach, the preferences of young adults who populate college campuses are more or less fixed and, therefore, any normative material aimed at them will be largely irrelevant in predicting their future behavior.

3. Another reason for normative behavioral economics: ideological pluralism

Apart from bickering over the existence of externalities, informational asymmetries and transaction costs, there is little disagreement among neoclassical economists on the universal applicability of maximization, the proposition that more choices are better than fewer, and the idea that competitive processes will eventually allocate scarce resources to the individuals who want them the most. Although there is vigorous and often interesting debate within neoclassical circles on specific policy issues, there is relatively little debate about how the very nature of consumers and firms inform and constrain the choices and objectives of policy makers. That is, the neoclassical economist characterizes the nature, or ultimate concern, of these units of economic decision-making a priori and, as such, behavior is not the main focus of inquiry. The key point is that adhering to certain a priori characterizations of behavior produces a distinct pattern of thinking about what is possible and what is desirable with respect to policy questions.

Of course it would be too simple to say that neoclassical economics represents an ideological monolith. Yet when compared with the policy orientation and techniques of neoclassical economists, the policy orientation and techniques of behavioral economists appear to be more diverse. On the one hand, behavioral techniques lead to a number of new arguments for the role of government in helping coordinate economic activity—roles that are much more difficult to motivate while adhering to neoclassical behavioral axioms. On the other hand, these same behavioral techniques attract a number of Austrian or Schumpeter-styled economists such as those collected in [Caldwell and Bohm \(1992\)](#). Austrian critics of neo-classical policy analysis, while no less enthusiastic about *laissez faire* policy prescriptions, tend to see more irrationality and flux in market processes than do neoclassical economists. Although zealous in advocating “market” solutions to social problems, Austrians tend to

make more modest claims than neoclassicals do regarding markets and social efficiency. Indeed, the fact that ideological opposites can find substantial common ground within behavioral economics provides impressive testimony on behalf of the strength of behavioral economic techniques, which hold appeal apart from their philosophical groundings.

The claim here is that a distinct toolkit of analytical techniques, rather than ideology, defines what it means to be a behavioral economist. After all, the ideologies of behavioral economists span a range of political views wide enough to encompass most positions within the neoclassical mainstream. By encompassing and exceeding the set of ideologies commonly associated with neoclassical economics, one concludes that it cannot be ideology that sets behavioral economists apart from neoclassicals. Behavioral economics, by investigating a range of different hypotheses about how consumers and firms behave, can be associated with a commensurately wide range of ideologies and approaches to policy.⁹

4. Normative behavioral economics and the diversified methodological portfolio

The arguments in favor of normative behavioral economics already articulated also argue in favor of more detailed methodological explication whenever economic analyses of policy problems are undertaken. Because the selection of any particular method is likely to rule out the advisability of a whole range of policy alternatives, it is important that this connection (between the choice of a particular method and the policy conclusion at which one arrives) be as explicit as possible when using economics to support specific normative claims. This is methodology at its best: when it explains how the techniques economists use shape their opinions about the world, creatively infusing the economist's world-view with specificity, while delimiting the range of socio-economic structure that can be rationalized as "good," "advisable," or otherwise conceived of as a worthwhile policy goal.

"More methodological explication," however, is not a popular item among the wish lists of critics of economics. One of the most prominent condemnations of methodological discourse is to be found in McCloskey's *The Rhetoric of Economics* (1985). In her brilliant analysis of economic metaphor and techniques of persuasion, McCloskey sides with contemporary philosophers such as Feyerabend (1975) and Rorty (1982) in rejecting "big M Methodology" as nothing more than abstract rule-making, weighed down by the grandiose intention of demarcating what counts as science from what does not. Without methodologists to keep economics on track, McCloskey argues, the "conversation" within economics performs just fine in regulating itself. Economics contains its own standards for deciding good arguments from bad, for telling an important fact from an unimportant one, or a true explanation from one which is false—and not because of methodologists' wise pronouncements. McCloskey (1985, p. 28) elaborates: "It is a market argument. There is no need for philosophical lawmaking or methodological regulation to keep the economy of intellect running just fine."

But what if the "economy of intellect" suffers from institutional flaws that flout competition, allowing monopolists to thrive, and reinforcing intellectual inertia? If market power

⁹ See, for instance, the Austrian behavioralist critique of neoclassical economics in Langlois (1998), moderate advocacy in favor of state intervention in Loasby (1988), the Marxian work of Elster (1978), and the interesting mix of cultural conservatism and economic liberalism (contemporary American meaning) in George (1993).

reigns in the “economy of intellect,” would there not be justification for devoting time and attention to methodological debate? McCloskey’s argument, while valid under competitive assumptions, provides little rationale for ruling out the possibility that methodological discourse can help assuage negative consequences of market power such as the underprovision of innovation, and the anti-competitive tactics of powerful incumbents (Gramm, 1988; McCloskey, 1988; Stanley, 1986). Without perfect competition, the case for a rule against rule-making is certainly diminished.

Rather than placing faith in a virtuous “anarchy” (as McCloskey puts it) among producers of economic rhetoric to right such wrongs, perhaps the regulatory spirit of those who would engage in the self-reflexive act of methodological analysis should be given a chance. When a community of rhetoricians is stuck in a rut, encouraging one’s peers to re-evaluate first principles is not necessarily worse than waiting around for the community to spontaneously shift paradigms. Given the departures from perfect competition present in the economics profession, I believe that devoting time to the consideration of methodology and its connection to policy analysis may usefully direct critical attention to the essential disagreements that animate leading debates in economics. This means spending more time analyzing the importance of assumptions instead of merely debating each side’s predicted outcome. At the very least, if economics articles were to routinely devote a few paragraphs to explaining how sensitive (or insensitive) their normative conclusions are to changes in methodological approach (e.g. “What policy recommendations were ruled out because of the technique I chose?”), readers could more transparently understand why respected economists so frequently disagree about policy matters.

This paper has argued that behavioral economics should aspire to say something about economic policy. The main obstacle to developing this aspiration and acting on it is not a lack of persuasiveness on the part of behavioral economics. Rather, it is the ingrained singularity of *homo economicus* as a basis for normative analysis that makes it difficult to direct most audiences’ attention to the connection between behavioral hypotheses and policy prescriptions. Without appreciating that behavioral assumptions (those used by behavioral economists or any other kind of economists) tend to rule out some policy ideas and favor others, an important selling point of methodological pluralism is lost.

As a demonstrably pluralistic set of techniques, behavioral economics has much to offer in the way of improving policy-making across a broad range of settings. Advancing the research program in normative behavioral economics implies thinking strategically about constructing rhetoric that will be persuasive to multiple audiences, including neoclassical economists, behavioral economists, and the public at large. Refining this rhetoric, with special attention to the link between analytical techniques and policy prescriptions, is therefore critical in helping achieve a more transparent intellectual process aimed at improving policy-making.

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References

- Akerlof, G.A., Dickens, W.T., 1993. The economic consequences of cognitive dissonance. In: *Economics and Psychology*. Elgar, Brookfield.
- Allais, M., 1953. Le comportement de l'homme rationnel devant le risque: critique des postulats et axiomes de l'école Americaine. *Econometrica* 21, 503–546.
- Altman, M., 1996. *Human Agency and Material Welfare: Revisions in Microeconomics and their Implications for Public Policy*. Kluwer Academic Publishers, Boston.
- Altman, M., 1999a. The methodology of economics and the survival principle revisited and revised: some welfare and public policy implications of modeling the economic agent. *Review of Social Economy* 57 (4), 427–449.
- Altman, M., 1999b. A theory of population growth when women really count. *Kyklos* 52, 27–44.
- Altman, M., 2000. Labor rights and labor power and welfare maximization in a market economy. *International Journal of Social Economics* 27 (22), 1252–1269.
- Axelrod, R., 1984. *The Evolution of Cooperation*. Basic Books, New York.
- Berg, N., Lien, D., 2002. Does society benefit from investor overconfidence in the ability of financial market experts? Working paper, University of Texas at Dallas.
- Bernardo, A.E., Welch, I., 2000. On the evolution of overconfidence and entrepreneurs. Working paper, University of California at Los Angeles.
- Bewley, T.F., 1999. *Why Wages Don't Fall During a Recession?* Harvard University Press, London.
- Caldwell, B.J., 1986. Economic methodology and behavioral economics: an interpretive history. In: Gilad, B., Kaish, S. (Eds.), *Handbook of Behavioral Economics*, vol. A. JAI Press, Greenwich, CT.
- Caldwell, B.J., Bohm, S. (Eds.), 1992. *Austrian Economics: Tensions and New Directions*. Kluwer Academic Publishers, Dordrecht.
- Camerer, C.F., 1997. Progress in behavioral game theory. *Journal of Economic Perspectives* 11 (4), 167–188.
- Constantinides, G.M., 1990. Habit formation: a resolution of the equity premium puzzle. *Journal of Political Economy* 98 (3), 519–543.
- Cyert, R.M., March, J.G., 1988. A behavioural theory of organizational objectives. In: Cyert, R. (Ed.), *The Economic Theory of Organization and the Firm*. New York University Press, New York.
- De Bondt, W.F.M., Thaler, R.H., 1990. Do security analysts overreact? *American Economic Review* 80 (2), 52–57.
- Dekel, E., 1992. On the evolution of optimizing behavior. *Journal of Economic Theory* 57 (2), 392–406.
- Duesenberry, J., 1949. *Income, Saving, and the Theory of Consumer Behavior*. Harvard University Press, Cambridge.
- Earl, P.E., 1988. *Behavioural Economics*, vol. 1. Elgar, Brookfield.
- Ellsberg, D., 1961. Risk, ambiguity and the savage axioms. *Quarterly Journal of Economics* 75, 643–669.
- Elster, J., 1978. *Logic and Society: Contradictions and Possible Worlds*. Wiley, Chichester.
- Etzioni, A., 1988. Opening the preferences: a socio-economic research agenda. In: Earl, P.E. (Ed.), *Behavioural Economics*, vol. 2. Elgar, Brookfield.
- Feyerabend, P., 1975. *Against Method: Outline of an Anarchistic Theory of Knowledge*. Verso, London.
- Frank, R.H., 1985. *Choosing the Right Pond*. Oxford University Press, New York.
- Frantz, R.S., 1992. X-efficiency and allocative efficiency: what have we learned? *American Economic Review* 82 (2), 434–438.
- Frantz, R.S., 1997. *X-Efficiency: Theory, Evidence and Applications*. Kluwer Academic Publishers, Boston.
- Galbraith, J.K., 1958. *The Affluent Society*. New American Library, New York.
- George, D., 1993. Does the market create preferred preferences? *Review of Social Economy* 51 (3), 323–345.
- George, D., 2001. *Preference Pollution: How Markets Create the Desires we Dislike*. University of Michigan Press, Ann Arbor, MI.
- Gigerenzer, G., Todd, P., The ABC Research Group, 1999. *Simple Heuristics that Make us Smart*. Oxford University Press, Oxford.

- Gilad, B., Kaish, S., 1986. *Handbook of Behavioral Economics*, vol. A. JAI Press, Greenwich, CT.
- Gilad, B., Kaish, S., Loeb, P.D., 1986. From economic behavior to behavioral economics: the behavioral uprising in economics. In: Gilad, B., Kaish, S. (Eds.), *Handbook of Behavioral Economics*, vol. A. JAI Press, Greenwich, CT.
- Gramm, W.S., 1988. Rise and decline of the maximization principle. *Journal of Behavioral Economics* 17 (3), 157–172.
- Guth, W., Huck, S., Muller, W., 2001. The relevance of equal splits in ultimatum games. *Games and Economic Behavior* 37 (1), 161–169.
- Hayek, F.A., 1945. The use of knowledge in society. *American Economic Review* 35, 519–530.
- Hoch, S.J., Loewenstein, G.F., 1991. Time-inconsistent preferences and consumer self-control. *Journal of Consumer Research* 17, 492–507.
- Katona, G., 1980. *Essays on Behavioral Economics*. University of Michigan Press, Ann Arbor, MI.
- Katona, G., 1993. Behavioral and ecological economics. In: *Economics and Psychology*. Elgar, Brookfield.
- Keynes, J.M., 1936. *The General Theory of Employment, Interest and Money*. Harcourt, Brace, New York.
- Kahneman, D., Knetsch, J.L., Thaler, R., 1986. Fairness as a constraint on profit seeking: entitlements in the market. *American Economic Review* 76, 728–741.
- Kahneman, D., Knetsch, J.L., Thaler, R., 1990. Experimental tests of the endowment effect and the coase theorem. *Journal of Political Economy* 98, 1325–1348.
- Knetsch, J.L., 1995. Assumptions, behavioral findings, and policy analysis. *Journal of Policy Analysis and Management* 14 (1), 68–78.
- Kuhn, T., 1970. *The Structure of Scientific Revolutions*, 2nd ed. University of Chicago Press, Chicago.
- Kyle, A.S., Wang, A., 1997. Speculation duopoly with agreement to disagree: can overconfidence survive the market test? *Journal of Finance* 52 (5), 2073–2090.
- Laibson, D., Zeckhauser, R., 1998. Amos Tversky and the ascent of behavioral economics. *Journal of Risk and Uncertainty* 16 (1), 7–47.
- Langlois, R.N., 1998. Rule-following, expertise, and rationality: a new behavioral economics. In: Dennis, K. (Ed.), *Rationality in Economics: Alternative Perspectives*. Kluwer Academic Publishers, Boston.
- Leibenstein, H., 1979. A branch of economics is missing: micro–micro theory. *Journal of Economic Literature* 17 (2), 477–502.
- Loasby, B.J., 1988. Making location policy work. In: Earl, P.E. (Ed.), *Behavioural Economics*, vol. 2. Elgar, Brookfield.
- Loewenstein, G., Prelec, D., 1992. Anomalies in intertemporal choice: evidence and an interpretation. *Quarterly Journal of Economics* 107, 573–597.
- Maital, S., 1986. Prometheus rebound: on welfare-improving constraints. In: Gilad, B., Kaish, S. (Eds.), *Handbook of Behavioral Economics*, vol. A. JAI Press, Greenwich, CT.
- Maital, S., Maital, S.L. (Eds.), 1993. *Economics and Psychology*. Elgar, Brookfield.
- Maki, U., 2001. The way the world works (WWW): towards an ontology of theory choice. In: Maki, U. (Ed.), *The Economic World View*. Cambridge University Press, New York.
- McCain, R., 1998. The logic of rationality: modal and defeasible. In: Dennis, K. (Ed.), *Rationality in Economics: Alternative Perspectives*. Kluwer Academic Publishers, Boston.
- McCloskey, D.N., 1985. *The Rhetoric of Economics*. University of Wisconsin Press, Madison, WI.
- McCloskey, D.N., 1988. The consequences of rhetoric. In: McCloskey, D.N., et al. (Eds.), *The Consequences of Economic Rhetoric*. Cambridge University Press, New York.
- Nelson, R.R., Winter, S.G., 1982. *An Evolutionary Theory of Economic Change*. Harvard University Press, Cambridge.
- Popper, K., 1934. *The Logic of Scientific Discovery* (English translation in 1968). Harper, New York.
- Posner, R., 1998. Rational choice, behavioral economics, and the law. *Stanford Law Review* 50, 551–581.
- Rabin, M., 1998. Psychology and economics. *Journal of Economic Literature* 36 (1), 11–46.
- Rabin, M., 2000. Inference by believers in the law of small numbers. Working paper, University of California at Berkeley.
- Rabin, M., Schrag, J.L., 1999. First impressions matter: a model of confirmatory bias. *Quarterly Journal of Economics* 114 (1), 37–82.

- Raiffa, H., 1994. The prescriptive orientation of decision making: a synthesis of decision analysis. In: Insaia, D.R., Sixto, R.-I. (Eds.), *Behavioral Decision Making, and Game Theory. Decision Theory and Decision Analysis*. Kluwer Academic Publishers, Norwell.
- Rorty, R., 1982. *The Consequences of Pragmatism: Essays*. University of Minnesota Press, Minneapolis, MN.
- Rubinstein, A., 1999. An empirically based microeconomics (book review). *Journal of Economic Literature* 37, 1711–1712.
- Schelling, T.C., 1984. Self-command in practice, in policy, and in a theory of rational choice. *American Economic Review* 74 (2), 1–11.
- Schwartz, H.H., 1969. Concerning the contention that efficiency in the allocation of resources really doesn't matter very much after all. *Economic Development and Cultural Change* 18 (1), 44–50.
- Schwartz, H.H., 1987. Perception, judgment, and motivation in manufacturing enterprises: findings and preliminary hypotheses from in-depth interviews. *Journal of Economic Behavior and Organization* 8 (4), 543–565.
- Schwartz, H.H., 1998. *Rationality Gone Awry? Decision Making Inconsistent with Economic and Financial Theory*. Praeger, Westport, CT.
- Schwartz, H.H., Forthcoming. Implementing development visions: the extraordinary urban renewal of Curitiba, Brazil.
- Scitovsky, T., 1998. The need for stimulating action. In: Dennis, K. (Ed.), *Rationality in Economics: Alternative Perspectives*. Kluwer Academic Publishers, Boston.
- Sethi, R., Somanathan, E., 2001. Preference evolution and reciprocity. *Journal of Economic Theory* 97 (2), 273–297.
- Simon, H.A., 1972. *The Sciences of the Artificial*. MIT Press, Cambridge, MA.
- Simon, H.A., 1986. Preface. In: Gilad, B., Kaish, S. (Eds.), *Handbook of Behavioral Economics*, vol. A. JAI Press, Greenwich, CT.
- Smith, V.L., 2000. *Bargaining and Market Behavior: Essays in Experimental Economics*. Cambridge University Press, New York.
- Stanley, T.D., 1986. Recursive economic knowledge: hierarchy, maximization and behavioral economics. *Journal of Behavioral Economics* 15, 85–99.
- Thaler, R.H., 1980. Toward a positive theory of consumer choice. *Journal of Behavior and Organization* 1, 1–24.
- Thaler, R.H., 1991. The psychology of choice and the assumptions of economics. In: *Quasi Rational Economics*. Russell Sage Foundation, New York.
- Thaler, R.H. (Ed.), 1993. *Advances in Behavioral Finance*. Russell Sage Foundation, New York.
- Thaler, R.H., 1997. The effect of myopia and loss aversion on risk taking: an experimental test. *Quarterly Journal of Economics* 112 (2), 647–661.
- Tomer, J.F., 1986. Productivity and organizational behavior: where human capital theory fails. In: Gilad, B., Kaish, S. (Eds.), *Handbook of Behavioral Economics*, vol. A. JAI Press, Greenwich, CT.
- Tversky, A., Kahneman, D., 1992. Advances in prospect theory: cumulative representation of uncertainty. *Journal of Risk and Uncertainty* 5 (4), 297–323.
- Veblen, T., 1899. *The Theory of the Leisure Class*. Macmillan, New York.
- Winter, S.G., 1988. Economic “natural selection” and the theory of the firm. In: Earl, P.E. (Ed.), *Behavioural Economics*, vol. 1. Elgar, Brookfield.