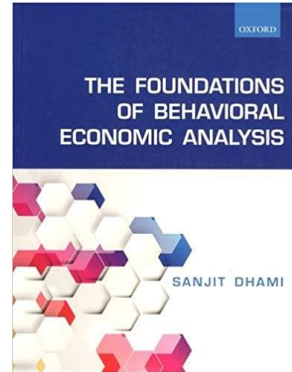


Sanjit Dhami. *The Foundations of Behavioral Economic Analysis*. New York: Oxford University Press, 2016. Pp. xxxiii + 1764. ISBN 978-0198715535. Paperback \$55.00.

Every discipline evolves. Economics is no exception. As soon as the neoclassical synthesis became comfortable in the mid to late twentieth century, the influence of psychology and sociology upon economics became apparent. “Behavioral economics” was born. However, (a) behavioral economics still hasn’t caught on as it should, and (b) contrary to what one might believe, this development was the result of *more empiricism*, not less—at least according to Sanjit Dhami’s massive tome, *The Foundations of Behavioral Economic Analysis*.



Indeed, “My personal hope,” he writes, “is that behavioral economics ceases to exist as a separate field within economics, and this becomes the normal way in which we do economics.” In his view, “behavioral economics is an enhancement of neoclassical economics to take account of more empirically supported evidence on human behavior, not its antithesis. Second, there is no paradigmatic battle between behavioral economics and neoclassical economics” (p. 2). Dhami emphasizes this in the introduction because behavioral economics has challenged many of the fundamental premises of neoclassicalism—from rational choice theory, to probabilistic decision making, efficient market hypothesis, etc. so much that some contend a paradigm shift is underway. Neoclassicalism, in its attempt to achieve credibility in its early phase by pulling economics from the social sciences into the natural sciences, cut itself off from reality—that is, from what we actually observe in the world of human behavior. Complex human beings became rationalist consumption machines that behaved according to clear axioms on paper. But that’s just it: Dhami passionately argues that the data contradicts the

neoclassical axioms so predictably that there is no excuse for continuing the enterprise as it has been conducted.

Two factors contributed to the gradual elimination of psychology from economics. First, around the turn of the twentieth century, there was “a distaste for the psychology of their period, as well as the hedonistic assumptions of Benthamite utility” (Camerer and Loewenstein, 2004). The second was the revealed preference approach popularized by Paul Samuelson that emphasized the observation of *choice behavior* rather than the psychological foundation for choice behavior (Bruni and Sugden, 2007). An important catalyst for the development of behavioral economics was the decline of the behavioralist school in psychology, and the emergence of cognitive psychology. (p. 3-4)

After summarizing a number of other economists expressing similar discontents, he concludes that “many of the contemporary methodological views in economics are retrogressive and a license to engage in defensive methodology to protect that status quo” (p. 7). As a case in point, he argues that some of the most revolutionary publications and studies in the field could never even be published today:

Kahneman and Tversky (1979) is the second most cited paper in all of economics, the foundation for the Nobel Prize to Kahneman, and the source of prospect theory, which is currently the most satisfactory decision theory under risk, uncertainty, and ambiguity. Yet the paper is based on hypothetical, non-incentivized, lab experiments. Any guesses if it would have been published in an economics journal today? (p. 19)

In short, the establishment has made little room for game-changing theories—or even modifications to existing models. Neoclassicalism is biased against the use of surveys precisely because its faulty methodology precludes their importance, but it is precisely such studies that would correct the faulty methodology. Economic orthodoxy suffers from many such vicious circles.

On a different note, Dhama notes that because of economics' status as a social science, many traditional economists relax their empirical standards. He believes this is unjustified:

A common view in economics (shared unfortunately by some behavioral/experimental economists, I must add) appears to be that there is something rather difficult and unique about testing economic theories, relative to the natural sciences. So, at least implicitly, the argument goes, one needs to accord a "special" status to economic theories....

The view that testing of theories is somehow easy or easier in the natural sciences, as compared to economics, must surely be deeply offensive and insulting to experimenters in the natural sciences...Astronomers who dealt with the question of the distance of earth from distant objects, or the chemical composition of stars that are millions of light years away, did not also seek a special status for their subject. They got on with the difficult job of seeking relevant measurements, often using indirect evidence and clever implications of theory. They were eventually successful after several decades of work. Are economists seriously arguing that their measurement problems are more difficult than the problems in the natural sciences?...The process of discovery, measurement, and of testing the theory, can be a long and arduous one; seeking a special status for the subject is defeatist and put bluntly, lazy. (p. 9)

This argument seems straightforward enough; is human behavior really more complicated than quantum mechanics? On the other hand, I feel uneasy about this argument mainly because it presumes a simplistic view of the world and the nature of human knowledge. Let us grant, for the sake of the argument, that economics can and should be treated as a natural science. Why stop at the social sciences? What would be Dhama's reasoning for not applying the same methods to every domain of human knowledge, including the humanities? Why shouldn't empiricism dominate philosophy, theology, linguistics, and the fine arts? It seems,

then, that we're dealing with a classic case of modernist empiricist reductionism, which does not clearly acknowledge how and why quantifiable languages (like math) are inherently superior to gaining knowledge and understanding. Dhami's perspective could use a macro-sized dose of post-modernism; different types of knowledge require different methodologies—lest we end up beating the world with a hammer thinking everything looks like a nail.

The content of the book itself involve all the models and arguments of behavioral economics. Because of its angle, there is particular emphasis on mathematical representation. Indeed, I cannot see how the book is less than upper graduate or doctoral level because of the amount of technical knowledge required. In terms of sheer space, perhaps around 50% of the book are equations. For those who are looking for this type of approach, a feast is in order. For those who want more qualitative analysis, there is much that can be skipped.

Part 2 outlines all the major issues and models surrounding behavioral economics. Two particular case studies are highlighted as particularly important for the whole book and discipline: prospect theory's (a) loss aversion and (b) non-linear probability weighting. Both originate in the work of Daniel Kahneman and Amos Tversky, which "may be identified as the beginning of modern behavioral economics" (p. 26). The first is "Figure 1: The power form of the utility function under prospect theory," and the second, "Figure 2: A plot of the Prelec function for $\beta = 1$ and $\alpha = .05$."

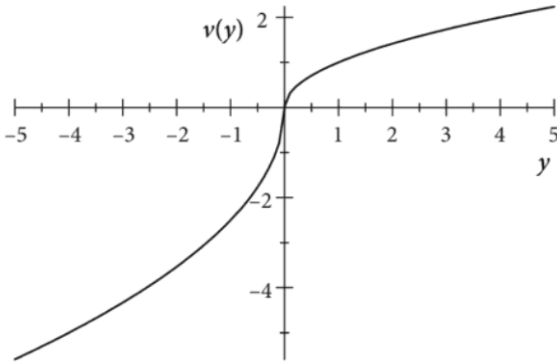


Figure 1 The power form of the utility function under prospect theory.

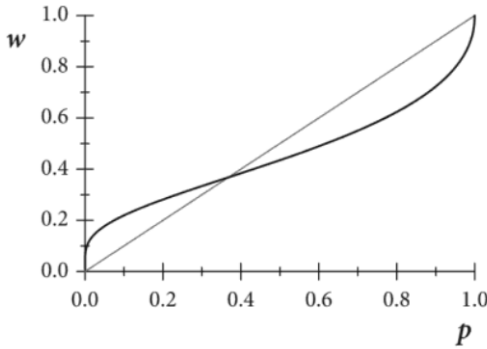


Figure 2 A plot of the Prelec function for $\beta = 1$ and $\alpha = 0.5$.

The first figure visualizes how people experience gain (top right quadrant) versus loss (bottom left quadrant). As it is evident, the line is steeper in negative territory than in positive territory. This Prospect Theory (PT) illustrates *loss aversion*, which contradicts the predictions of Expected Utility Theory (EU).

PT is a *descriptive* theory of choice that strives to explain actual human behavior not just risk, but also for uncertainty and ambiguity. Like many behavioral theories, it also has rigorous axiomatic foundations. PT not only accounted for the known violations of EU, it helped to successfully

predict and explain a range of new phenomena....PT gives a rich account of the difference in human behavior in the domain of losses. A key idea that drives many results in behavioral economics is *loss aversion*, i.e., losses bite more than equivalent gains. Kahneman and Tversky (1979) report media figure of loss aversion of 2.25. So, for instance, assuming linear utility, a monetary gain of 100 feels like a utility gain of 100, while a monetary loss of 100 feels like a utility loss of 225 under PT; under EU a loss of 100 would just feel like a utility loss of 100. Loss aversion is empirically very robust, and it may help some of us to understand our own past behavior. (p. 26-27)

The second figure illustrates non-linear probability weighting. In EU, people should weigh options according to their actual probabilities (that's the straight line in the figure). But that isn't the case—as the curved lines indicate. People predictably weigh different probabilities differently; they regularly overweight small probabilities and underweight large probabilities. For example, as Dhami notes, Sydnor (2010) argues that the over-weighting of small probabilities explains the fact that decision makers over-insure their homes against modest-scale risks. Scholars continue to debate what evolutionary/beneficial purpose this misperception may have.

In any case, prospect theory is many times superior to EU and current models and established credibility but for some reason have yet to become accepted. “A non-economist reading this introduction would surely think PT must be the main decision theory taught in microeconomics courses. Wrong! Most of the standard texts in microeconomics either omit any mention of PT, or only refer to it in passing...Incredibly, it is still possible to get a degree in economics in many universities without having undertaken a study of prospect theory, or even a course in behavioral economics” (p. 29).

Part 2 looks at all the different models under the category of “other-regarding preferences.” Part 3 looks at models on “time discounting,” Part 4 on “Behavioral Game Theory,” Part 5 on “Behavioral Models of

Learning,” Part 6 on “Emotions,” Part 7 on “Bounded Rationality,” Part 8 on “Behavioral Welfare Economics,” and Part 9 on the infant field of “Neuroeconomics.”

For anyone who is interested in the intersection of psychology and economics, or just interested in how neoclassical theory needs serious revision to live up to its own standards, *The Foundations for Behavioral Economics* is a must. It will likely remain the standard textbook of the field for many decades to come.

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