

The rise of behavioral economics: Richard Thaler's misbehaving

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Abstract

Behavioral economics emerged in the 1980s, above all because of the creative work of Richard Thaler, exploring the relevance of the endowment effect, mental accounting, concern for fairness, and other “anomalies” from the standpoint of standard economic theory. His engaging book, *Misbehaving*, offers a narrative account of how these ideas came about, and also explores some of their implications for the future. Continuing challenges include making predictions when behavioral findings cut in different directions (as, for example, where optimistic bias conflicts with availability bias); understanding the line between nudging and manipulation; and applying behavioral findings to pressing public policy challenges, such as poverty, education, terrorism, and climate change.

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In cataloguing the benefits of regulations designed to reduce deaths on the highways or from air pollution, the U.S. government is required to monetize the value of saving human lives. To do that, it relies on something called the “value of a statistical life” (VSL). That number comes mostly from ascertaining the amounts that people are actually paid to incur risks in the workplace. When American workers face an additional mortality risk of 1 in 100,000, how much more money do employers give them? Across the economy, the current answer, within academia and the U.S. government, is generally around \$90, leading to a value of a statistical life of \$9 million.

Conventional economists tend to like the idea of using VSL, but in many circles, that idea is highly controversial. Do workers and employers really make rational tradeoffs between mortality risks and money? The government’s pervasive use of VSL counts as a massive triumph for standard economic theory and for its assumptions about human rationality. Can you guess the original thinker behind the use of VSL? The improbable answer: Richard Thaler, founder of behavioral economics, which has transformed social science by exploring how human beings depart from the usual economic accounts of rationality.

Thaler’s doctoral dissertation at the University of Rochester inaugurated both the ideas and the techniques that now play such a large role in the U.S. government (and around the world). Thaler’s adviser was Sherwin Rosen, a believer in standard economic theory, and the two produced a highly influential paper on the topic, with the not-exactly-delightful title, “The Value of Saving a Life”. Despite the successful coau-

thorship, Rosen was unimpressed with Thaler, later telling the *New York Times*, “We didn’t expect much of him”. (Now is a good time for a big disclaimer, in very bold letters: Thaler is not only a coauthor but also a friend of mine, so please discount for possible bias. I can honestly report that having read an early draft, I didn’t expect much of it. An intellectual autobiography of an economist? With extended tales of academic battles in the *Journal of Business*? Could that possibly work? Against all odds, it does).

Thaler has an unfailingly mischievous mind. At the same time that he was producing his math-heavy dissertation, he started asking people two questions. The first: *How much would you pay to eliminate a mortality risk of 1 in 100,000?* The second: *How much would you have to be paid to accept a mortality risk of 1 in 100,000?* According to standard economic theory, people’s answers to the two questions should be essentially identical. But they weren’t. Not close. The answers to the second question were much higher (often in the range of \$500,000) than the answers to the first (often in the range of \$2000). In fact some people responded to the second question, “there is no amount you could name”. According to economic theory, that’s serious misbehaving.

Thaler showed his results to Rosen, who told him to stop wasting his time, but Thaler was hooked. As he eventually demonstrated, the disparity in people’s responses to the two questions reflects the “endowment effect”, which is now a centerpiece of behavioral economics¹: People value goods that they have more than they value exactly the same goods

¹ See Richard Thaler, *Misbehaving* 12-19 (2015).

when they are in the hands of others. If you are asked to give up a right (say, to be free from a risk), you'll demand a lot more than you will pay to get that same right. The endowment effect can be found for countless things, including coffee mugs, candy bars, lottery tickets, environmental amenities (such as clean air), and legal protection of many different kinds.

It would be an overstatement to say that behavioral economics was born with this little survey, but Thaler started to collect anomalies, often involving the misbehavior of his friends, and resulting in what he called the List. As he explains it here, the List captures a series of differences between Econs (an imaginary species much discussed by economists) and Humans (our actual species). Here's one example: "Stanley mows his lawn every weekend and it gives him terrible hay fever. I ask Stan why he doesn't hire a kid to mow his lawn. Stan says he doesn't want to pay the \$10. I ask Stan whether he would mow his neighbor's lawn for \$20 and Stan says no, of course not". But Thaler didn't know what to do with his List, thinking that no one would want to publish an academic paper called "Dumb stuff people do".

In 1976, serendipity struck. Along with Rosen, Thaler went to a conference in California, where he met a young Israeli psychologist named Baruch Fischhoff, who told him about two then-unknown psychologists named Daniel Kahneman and Amos Tversky. That led him to read a paper of theirs the next day, cataloguing systematic departures from the standard predictions of economic theory. As he read the paper, his "heart started pounding the way it might during the final minutes of a close game. The paper took me thirty minutes to read from start to finish, but my life had changed forever". (In the last decades, a lot of people have had that reaction to reading Kahneman and Tversky – and to reading Thaler as well. I confess that I am one).

What particularly impressed Thaler, and where Kahneman and Tversky went beyond the social science of the time, was in demonstrating that people's errors are not random but predictable. Economists of course knew that people made mistakes but believed the mistakes occurred randomly, and so canceled each other out, leaving intact predictions based on the rational actor model. Kahneman and Tversky showed that this assumption was wrong. For example, Kahneman and Tversky showed that in assessing risks, people use the "availability heuristic". This is a mental shortcut, in which we assess risks not by engaging in statistical analysis but instead by asking whether we can easily think of events in which the relevant risks came to fruition. If you can think of recent thefts in your neighborhood, you might have a grossly inflated sense of the danger – and if you can't, you might be far too complacent. The availability heuristic plays a big role in individual lives and in public policy, sometimes leading to both excessive and insufficient precautions.

Kahneman and Tversky also emphasized the importance of "framing". Suppose that your doctor asks you to consider whether to have some operation for a serious illness, and

he tells you that of 100 people who have that operation, 90 are alive after five years. You might well ask him to go forward. But suppose he tells you that of 100 people who have the operation, 10 are dead after five years. You might well hesitate. The influence of "frames" shows the pervasive impact of *supposedly irrelevant factors* (in Thaler's valuable shorthand, SIFs), which economic theory deems immaterial, but which can have a large effect on what people end up doing.

Importantly, Kahneman and Tversky did not claim that people are "irrational". Far from it (and hence it is a mistake to suggest that behavioral science shows that people are "predictably irrational"). On the contrary, they urged that our heuristics, or rules of thumb, usually work well. But in some contexts, they fail us, which can lead to systematic mistakes.

Pressing this claim with skeptical economists, Thaler repeatedly encountered an argument that he calls "the invisible handwave". The basic idea is that even if individuals blunder, competitive markets and invisible hands will cure the problem and eventually set them right. Thaler says that economists cannot ever finish this argument with both hands remaining still. "Handwaving is a must because there is no logical way to arrive at a conclusion that markets transform people into rational agents" (p. 52). To be sure, he is aware of the more sophisticated argument that because of market pressures, prices might turn out to be fully rational even when individuals are not an argument he deems "certainly plausible, perhaps even compelling. It just happens to be wrong" (p. 53).

Pursuing behavioral economics was not, by the way, an obviously rational career choice. Many years later, Thaler attempted to explain, in a graduation speech, why he went that route². He made two points. "First, my opportunity costs were not all that high", because he "was only an average economist with rather modest prospects". And "second, I found this new enterprise to be great fun. . . . Now, you might ask, what is rational about choosing a career based on fun? I say that nothing could be more rational. I think of fun as the ultimate hedge. If you enjoy what you are doing, you establish a pretty good floor on how life turns out. In contrast, if you suffer through every stage of the process, can becoming rich or famous really be worth it?" In my view, those are among the most rational words Thaler, or any economist, has ever written.

Thaler's first behavioral paper, published in 1980, was called "Toward a Positive Theory of Consumer Choice"³. Relying heavily on Kahneman and Tversky, and emphasizing the endowment effect, the paper was rejected by multiple journals before being accepted by a brand-new one, the *Journal of Economic Behavior and Organization*. (It is now one of his most-cited papers, with an astounding 4386 citations as of early 2016, the most in 2014; it is too soon to know whether the 2015 figure will be even higher.) From that point, Thaler

² <http://www.chicagobooth.edu/pdf/thalergrad.pdf>

³ Richard Thaler, toward a positive theory of consumer choice, 1 *Journal of Economic Behavior and Organization* 39 (1980), available at <http://www.eief.it/butler/files/2009/11/thaler80.pdf>

was off and running. In a series of papers, he expounded on the List to specify how Humans are different from Econs. Many of the papers have become classics; they are foundational to contemporary social science.

Humans are, of course, intensely concerned with fairness. If you look around, you'll see that most of us want to act fairly, and we'll give up some money in order to be fair, and most of us will punish unfairness, and we'll give up some money in order to do exactly that. But many economists have little patience with the idea of fairness, which they see a muddle, and the question remains: What does it even mean to say that people care about fairness?

Working with Kahneman and Jack Knetsch of the University of British Columbia, Thaler surveyed people to find out⁴. He asked, for example, whether people thought it fair for a hardware store to raise the price of snow shovels from 15 to 20 after a large snowstorm. Over 80 percent of people found that price increase unfair. It turns out that in making judgments about what's fair, people have in their mind a kind of "reference price", and they don't like it when companies depart from that price. Sure, increased costs can justify a bump in that price, but snowstorms just don't.

The idea of a reference price helps resolve a serious problem that has long befuddled economists: Why don't wages fall during a recession? The best answer, based on Thaler's work and elaborated by Yale's Truman Bewley⁵, is behavioral. Employees think that it is grossly unfair for employers to cut their wages. Employers are aware of that, and they are afraid of how their employees will perform if they believe that they have been treated unfairly. So they don't cut their wages. With respect to pricing decisions, however, Thaler thinks that many firms "fail at the basics of business fairness". In light of his findings, Thaler would have predicted Uber's public relations problems with "surge pricing".

Thaler was also intrigued by the fact that at a party, his economist colleagues turned out to be quite happy when he removed a bowl of cashews sitting on a table before dinner was served. According to standard economic theory (and common sense), it usually isn't desirable to take away an attractive option (eating the cashews). Building on the example, Thaler noticed numerous contexts in which people suffer from self-control problems, are fully aware of that fact, and take steps to counteract those problems. To make sense of all this, he suggested that we should think of people of two selves, a Planner and a Doer, with each struggling for supremacy⁶. To counteract Doers, Planners can adopt rules in the form of commitment strategies that restrict the Doers' choices. Like Ulysses seeking to avoid the Sirens, a Planner can decline to stock the refrigerator with anything but fruits and vegetables, can make investments that he cannot easily withdraw,

or can delegate authority to a private or public institution to counteract his own short-term impulses.

Improbably, Thaler's investigation of human foibles led him to the field of finance, where we might expect those foibles to be least important. If some people are dumb investors, won't others be able to take advantage of them, and ensure that stock prices end up essentially right? In a series of papers, Thaler helped to establish the whole field of behavioral finance, showing that the market as a whole sometimes overreacts (and underreacts as well). And having documented anomalies in the behavior of individuals and firms, and also market prices, Thaler became interested in public policy, asking whether behavioral economics might help "make the world a better place", and "do so without confirming the deeply held suspicions of our biggest critics that we were closet socialists, if not communists, who wanted to replace markets with bureaucrats?"

Those questions initially led Thaler to focus on the topic of retirement savings. As early as 1994, he offered this suggestion: If employees were automatically enrolled in savings plans, participation rates might increase dramatically, even if the cost of opt-out was very low. (Several years later, Harvard economist Brigitte Madrian, then at Chicago, wrote an empirical paper demonstrating that Thaler was right⁷). And with UCLA economist Shlomo Benartzi, he developed the idea of Save More Tomorrow, by which employees are asked whether they want to put some percentage of their future wage increases into pensions. Thaler observed that people might be reluctant to part with some of their current take-home pay, but will not much mind if a future gain is somewhat reduced. And if the plan was set up so that it would stay in place unless people opted out, inertia would work in its favor. By now, both automatic enrollment and Save More Tomorrow plans have been adopted all over the country, and they are receiving considerable international attention. (A close cousin of Save More Tomorrow, by the way, is Give More Tomorrow, designed to promote charitable contributions⁸. Some early data suggests that Give More Tomorrow works well. Let's hope that we will see such programs in action.)

Thaler's work on retirement planning helped lead to our book *Nudge*, which explores an assortment of choice-preserving approaches, designed to steer people in good directions (by their own lights) while also allowing them to go their own way. The book led in turn to Thaler's close and continuing engagement with the United Kingdom's Behavioural Insights Team, sometimes called the Nudge Unit, created by Prime Minister David Cameron in 2009. In his capacity as adviser, Thaler emphasized two simple ideas, which have become mantras for the team. The first: "If you want to encourage someone

⁴ Daniel Kahneman, Jack Knetsch, and Richard H. Thaler (1986). "Fairness and the assumptions of economics", *The Journal of Business* 59(4), S285-S300.

⁵ See Truman Bewley (2002). *Why wages don't fall during a recession*.

⁶ Richard Thaler and H. M. Shefrin (1981). "An economic theory of self-control", *Journal of Political Economics* 89(2), 392-405.

⁷ Brigitte Madrian and Dennis Shea (2001). "The power of suggestion: Inertia in 401(k) participation and savings behavior", *The Quarterly Journal of Economics* 116(4), 1149-1187.

⁸ Thaler and I briefly discuss the idea in *Nudge*. To my knowledge, the only study is Anna Breman (2011): "Give more tomorrow: Two field experiments on altruism and intertemporal choice", *Journal of Public Economics* 95(11), 1349-1357.

to do something, make it easy". The second: "We can't do evidence-based policy without evidence". Thaler notes that behavioral sciences have been incorporated in the work of 136 nations around the world, and that Chicago, his home, has created its own behavioral insights team. He says, "Encourage your own governments to do likewise. The failure to do so amounts to serious misbehaving" (p. 345).

It is not possible to appreciate Thaler's career without understanding that he was long viewed as a renegade – if not quite an enfant terrible, at least a bit terrible. He struggled to find a publisher for some of his most influential papers. When he was appointed at the University of Chicago, Nobel laureate Merton Miller, one of the university's great figures, did not conceal his displeasure. Asked why he did not block the appointment, Merton could only respond, "each generation has got to make its own mistakes". Federal judge Richard Posner, founder of the economic analysis of law, was quite exercised when Thaler spoke at Chicago's law school, charging, "You are completely unscientific!" (I was there, and it was pretty ugly.) But in 2015, Thaler was the President of the American Economic Association, and he is a strong candidate for a Nobel Prize of his own. One of the many virtues of this book, which is bound to become a classic, is that it offers clear, helpful, vivid summaries of the author's most important academic work. At the same time, behavioral science, including behavioral economics, remains relatively young, and for future progress, several issues deserve continuing attention.

Revealingly, Thaler's own work began with the List, and some critics vigorously object that the field itself consists not of a theory but of an updated List, with a bewilderingly long set of heuristics, biases, and other departures from standard economic accounts. That is a legitimate concern. Some psychologists ridicule economists for having a weird and distorted picture of human beings, but they should be more careful. Economists seek to make predictions, and for most purposes, economists are social science's better predictors. Suppose that the Environmental Protection Agency is adopting a new fuel economy standard for motor vehicles, and it wants to identify the costs and the benefits. Standard economists can tell the EPA a great deal; one question is how much psychologists and behavioral economists have to add. Or imagine that the government is concerned about an impending disaster, such as a flood or a hurricane. How, exactly, can behavioral findings help?

Suppose we know, from behavioral research, that people use the availability heuristic, suffer from inertia, are subject to anchoring, disregard the long-term (and hence show "present bias"), display unrealistic optimism, and are likely to overweight small risks of catastrophe (as Kahneman and Tversky have found). How, then, will people react to a warning about an impending natural disaster? What about a potential outbreak of an infectious disease? What about an apparent risk of recession? Is it possible to make predictions when two biases cut in one direction and three cut in another? Can we really make predictions on the basis of a list? What kinds

of predictions? There are also questions about heterogeneity within relevant populations. When (say) 65 percent of people show a bias, or use a heuristic, what distinguishes them from the 35 percent who do not?

Some social scientists, prominently including Ralph Hertwig and Elke Weber, have made significant progress on some of these questions, but there is far more to be learned⁹. For the next period, behavioral scientists –and especially younger ones– should be devoting considerable attention to the project of understanding heterogeneity, and of making reliable predictions when behavioral findings appear to point in different directions.

With respect to policy, there are also fair questions about the risk of manipulation. If people are pervasively influenced by supposedly irrelevant factors, what are the ethical limits on the uses of such factors by government? Amos Tversky joked that his work with Kahneman established what was long known to "advertisers and used car salesmen", and invoking ideas about dignity and autonomy, some people have been alarmed by the prospect of elected officials using behavioral science to move citizens in their preferred directions. In my view, these concerns are wildly overstated, and they lose their force in the context of concrete practices. Recent uses of behavioral science have been designed to ensure that people's decisions are informed (as in credit card disclosures, mortgage simplification, and improved fuel economy labels) and to promote helpful default rules (as for pension plans, health insurance, and free school meals for poor children). But it is true that full transparency and accountability are important, and on the concept of manipulation, far more work needs to be done.

It is also important to see that while Behavioral Sciences Teams can be extremely helpful, we should not think that they are either necessary or sufficient for the incorporation of behavioral insights. Some academic researchers are now falling victim to what we might call "the Behavioral Sciences Team Heuristic", which measures the influence of behavioral science by asking whether the relevant nation has a Behavioral Sciences Team. That is not the worst heuristic in the world, but it's pretty bad, and it often misfires. Any such team may or may not be influential (it could even turn out to be marginal), and a great deal can be, and has been, done without one.

If behavioral science is to play a role in policymaking, it is for two possible reasons. First, existing research can tell policymakers something that they need to know. It is clear, for example, that the default rule really matters: If people have to take steps to enroll in a plan of some kind, participation rates will likely be far lower than if they are automatically enrolled. (Without a behavioral science team, Oregon has recently taken advantage of this point by becoming the first state in the union that automatically registers people as voters. California has followed.) It is also clear that complexity can impose exceedingly high costs; lengthy paperwork requirements can

⁹ See Ralph Hertwig et al. (2004): "Decisions from experience and the effect of rare events in risky choice", *Psychological Science* 15(8), 534-539.

undermine important programs. Second, people in government might do their own research, above all by conducting randomized controlled trials.

But contrary to what some people seem to think, there is no need for a Behavioral Sciences Team for either task. If the goal is to benefit from existing research, what is most important is high-level political support. In the United States, a great deal of recent legislation shows the influence of behavioral findings, without the assistance of any kind of behavioral sciences team. Examples include the Affordable Care Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, and the Credit Card Accountability, Responsibility, and Disclosure Act¹⁰. The same is true of executive branch actions involving fuel economy, energy efficiency, education, childhood obesity, open government, and much more.

There is nothing at all distinctly behavioral, of course, about empirical testing or randomized controlled trials. Many people who have no enthusiasm for behavioral economics, and who think that standard economic theory has things essentially right, love the idea of testing, and they endorse, even insist on randomized controlled trials. (Behavioral economics does not equal empirical testing, though those who engage in empirical testing will often end up behaviorally inclined.) Agencies hardly need a Behavioral Insights Team to test their policies. They can, and should, do that on their own.

These points ought not to be misunderstood. No one denies that Behavioral Insights Teams can do and have done a great deal of good, and nations should certainly be encouraged to consider creating them. Their emergence and proliferation is a significant gain; there should be more of them. But we ought not to measure the influence of behavioral science by asking whether a nation has such a team. When behavioral insights play a role in actual policy, it is not because of academic theories and abstractions, but because the most important policymakers want to solve concrete problems, and they understand that those insights are a helpful way of addressing those problems.

In terms of the most pressing public policy challenges, a great deal of thinking needs to be done on the application of behavioral insights. With respect to poverty, Thaler's slogan, "make it easy", is highly relevant, not least because of the problem of cognitive scarcity, brilliantly elaborated by Sendhil Mullainathan and Eldar Shafir¹¹. But "make it easy" is hardly enough to ground an antipoverty platform. Far more thinking needs to be done on that topic. For climate change and other environmental problems, consumer behavior greatly matters, and automatic enrollment in green energy can help. Education is a ripe area for users of behavioral science. Both the appeal and the effectiveness of terrorism seem to have a great deal to do with behavioral findings, and behaviorally informed tools might be devised to reduce relevant risks. In these and other areas, we are merely at the earliest stages.

Now established as one of the great figures in the history of

economic thought, Thaler has no predecessors. A rebel with a cause, he isn't especially political. He confesses to being lazy, and he isn't good at math, and he doesn't have much patience for philosophy. Where he wins Olympic gold is in keen observation; his greatest insights come from actually *looking*. Full of mischief, and delighted by human foibles, he is fully aware of this: "The first step to overturning conventional wisdom, when the conventional wisdom is wrong, is to look at the world around you" (p. 355). As it turns out, that's pretty rational, even if it is also a way of misbehaving.

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¹⁰ For a catalogue, see Cass R. Sunstein, *Simpler* (2013).

¹¹ See Sendhil Mullainathan and Eldar Shafir, *Scarcity* (2013).