

The Inventor of Behavioral Finance Looks Back

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“Economics is...a branch of...animal behavior.” – Walter L. Battaglia¹

Behavioral finance is one of the great discoveries of our time, and the University of Chicago professor and investment manager Richard Thaler is one of its principal discoverers. *Misbehaving* is Thaler’s personal account of his discoveries, which influence the way assets are managed, policy is conducted and economic theory is understood and taught.

Behavioral finance is the idea that investors do not act like the rational optimizers and profit maximizers that neoclassical economics assumes them to be. (Behavioral economics, a related field also closely linked to Thaler, studies irrational behavior in the real economy.)

Misbehaving is not an exceptional read. Thaler is not Michael Lewis or Peter Bernstein, weaving dry concepts into magical prose. His book, constructed as a memoir, is workmanlike and informative with much to recommend it. But the reader is unlikely to come away with a changed view of the world. Those interested in revolutionizing their thinking on human behavior as it relates to investing should start with Daniel Kahneman’s *Thinking, Fast and Slow* – a psychology book – and Hersh Shefrin’s *Beyond Greed and Fear*, which delves deeply into the investment issues raised by behavioral finance.² Read those and add Thaler’s book as enrichment.

Misbehaving is one part personal history, one part brief against neoclassical economics, one part primer on behavioral economics and finance and one part guide to practical applications. (The main applications are active investment management, where investors’ predictable errors provide a framework for beating the market and “nudge” policies, which are behavioral tricks intended to help people help themselves, for example by saving more.) While *Misbehaving* does not hold together as a unitary book, it combines different aspects of Thaler’s work into a single, accessible volume, and in that regard it succeeds.

A personal victory

Thaler’s journey through the economics profession was a curious one. As a young Ph.D. student, he attacked head-on one of the most fundamental principles of conventional economics, the assumption that economic agents (people) act rationally. Others who had taken this path did not get far. The late labor economist Sherwin Rosen, unimpressed with Thaler, said, “We did not expect much of him.”³ Yet, some decades later, Thaler ended up as president of the American Economics

Association, the field's most prestigious group. In that sense behavioral economists have won – it has become socially acceptable to be one – despite the persistence of the rationality assumption as the foundation of economic analysis.

Cognitive biases

Behavioral economics and behavioral finance are based on the observation that people do not process information rationally. Instead, they suffer from cognitive biases, imperfections in processing that cause people to believe things that aren't true, misunderstand the consequences of even simple decisions and act against their own interest. Thaler devotes several chapters to documenting these often amusing foibles.

For example, a plurality of people surveyed think that if they paid \$20 for a bottle of wine, but it is now worth \$75, drinking the bottle costs them nothing (because they already paid for it), but dropping and breaking the bottle costs them \$75. If that is the best that people can do in assessing the costs and benefits of an action, no wonder they misprice securities, invest in funds that have already gone up and fail to save enough for retirement! The behavioral critique of rationality in economics and finance certainly has strong intuitive appeal.

Humans and econs

Thaler draws a sharp distinction between real people, who make mistakes – “humans” – and the fictional agents of economic models, whom he calls econs.⁴ Econs are lightning-fast calculators who have access to complete information about every situation, understand all of the ramifications of their decisions and make each decision with an eye to maximizing utility, invoking a kind of enlightened selfishness.⁵ People don't behave like that, so it's sensible to question what would happen to economic theories and predictions if one drops the assumption that they do. That is the essence of Thaler's contribution to economics, and it's a valuable one.

Yet Thaler overstates the faults of conventional economics. There may have been (and there still may be) economists who believe that humans act like utility-maximizing genius robots, but I haven't met one. More realistically, economists tend to believe that economic models can be constructed as *if* people behave like econs, and that such models are much more useful and accurately predictive than they would be if one had to drop the rationality assumption. Without the rational-agent assumption, economics would be lost at sea, unable to make a prediction or a policy recommendation – but that doesn't mean the assumption is, or should be, realistic. A half-century ago Milton Friedman famously argued that the test of a theory is the accuracy of its predictions, not the realism of its assumptions, and that principle still holds.⁶

The “as if” critique, dismissed by Thaler, is actually relevant

Thaler, noting that he encountered the “as if” critique often in his early effort to persuade colleagues of the behavioral view, is dismissive of it:⁷

One of the most prominent of the putdowns had only two words: “as if.” [T]he argument is that even if people are not capable of...solving the complex problems that economists assume they can handle, they behave “as if” they can... Even today, grunts of “as if” crop up in economics workshops to dismiss results that do not support standard theoretical predictions.

While Thaler is dismissive of this concept, it deserves a fair hearing.

It is hard to overstate the beauty and power of neoclassical, rationality-based economics as an explanation for the world as we see it (or “theory of everything”). Once you’ve grasped the importance of tradeoffs, incentives, competition, cooperation, decision-making on the margin and so forth, you see these principles in everything, including non-human realms such as biological evolution.⁸ Yet behavioral economics says that the founding principles of conventional economics, especially the assumption of rationality, are, in some sense, wrong. If that is the case, we can’t rely on the intuition provided by conventional economics, about the real economy, financial markets or much of anything else.

For example, conventional (neoclassical) economics says that companies increase their production until the marginal cost of a unit of production equals marginal revenue. By asking corporate managers, Thaler found that many companies don’t even know that their marginal cost varies with the amount produced, nor do they maximize profits by setting output at the optimal level. Instead, they try to sell the greatest number of units they possibly can.

Does behavioral economics, then, overturn this foundational idea, that companies set marginal cost equal to marginal revenue? Yes and no. “Sell as much as you can” is a pretty good – not perfect – heuristic for getting close to the profit-maximizing level of output because of the limits placed on “as much as you can” by competitors’ production and pricing, alternative uses for the money and consumers’ limited ability to pay. There will be some waste, some unsold goods, but not a lot! And there will be some waste with the marginal-cost method, too, because of error in estimating the proper level of output.

At any rate, companies will learn pretty quickly not to make massive, repeated mistakes in determining output because, if they do, investors will allocate capital elsewhere, driving the poorly-run company’s stock price down or running the company out of business (which is exactly as it should be; markets are a machine for allocating capital to its best use, unforgiving of poor management). The economy functions *as if* conventional economics is its set of operating instructions, even if that isn’t precisely true.

From behavioral economics to behavioral finance

As Thaler points out, finance is the branch of economics where behavior is most likely to be rational because financial markets tend to be liquid, transparent, deep, continuous and subject to arbitrage. Thus, it was in finance that the discovery of behavioral anomalies was most surprising and most vigorously resisted.

Still, the anomalies are there, and there are many of them. Thaler recounts many anecdotes familiar to readers of other behavioral finance literature. Among them are the stocks of 3Com and Palm, linked by crossholding, which were priced in such a way that, by using a long-short strategy, 3Com could theoretically be purchased at a negative price; the inconsistency of the prices of Royal Dutch and Shell, which are claims on the same corporate assets; the existence and persistence of value and small-cap anomalies that violate the CAPM; and many others. By the time Thaler is done, you would have to be immune to logical reasoning to believe that market prices, always and everywhere, reflect fundamental value.

The dogmatism of (some) academics

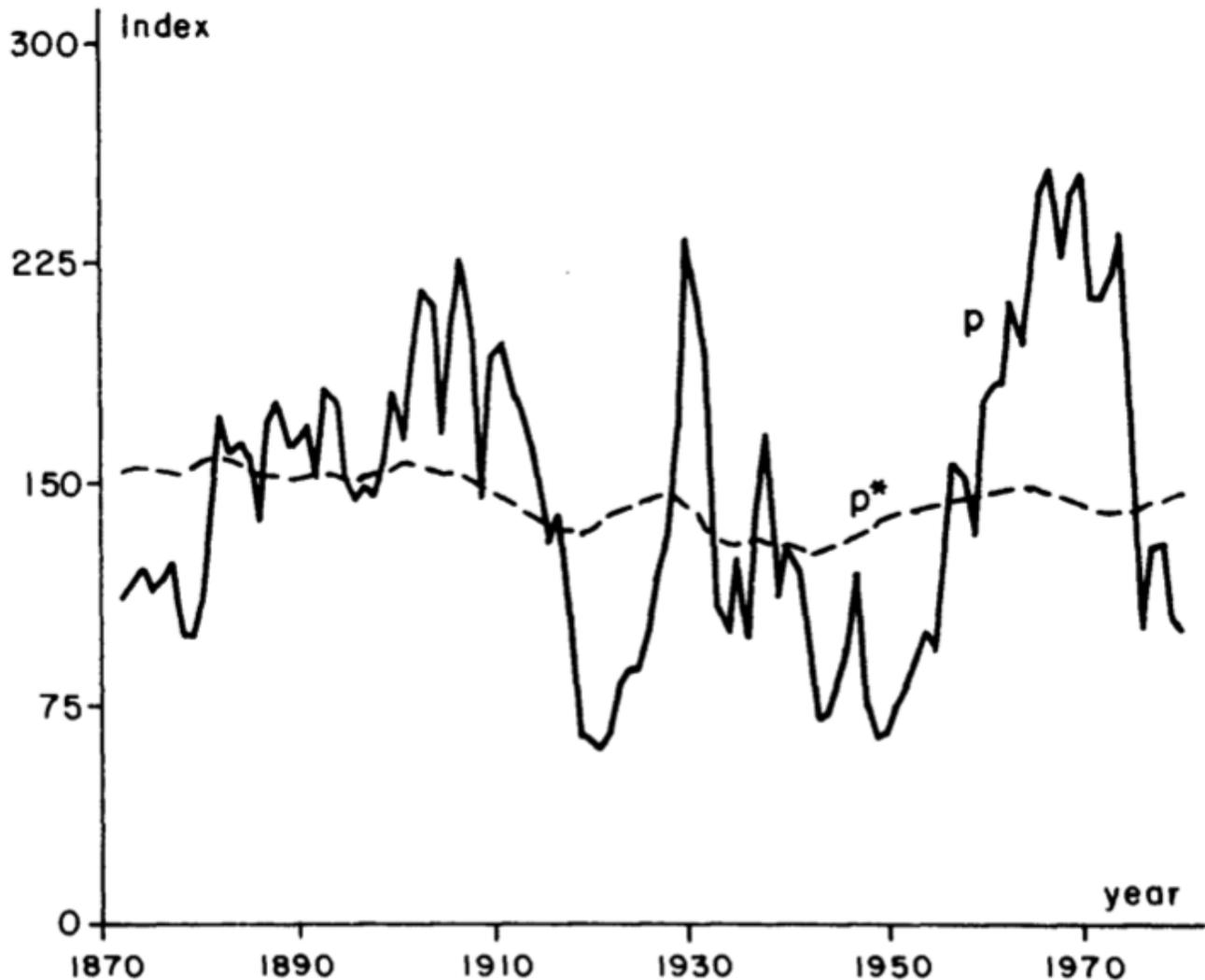
But today's investors are unlikely to appreciate the extent to which academics in the 1970s, when Thaler began his quest, shut out all attempts to show how or why markets might be inefficient. As Thaler notes, most papers that challenged efficient markets were rejected outright by prestigious journals, and the few that were accepted were accompanied by "abject apologies [from the authors] for the results."⁹ It was as though the authors had announced to their preachers that they had ceased to believe in God.

It is right for the proponents of a good theory to defend it from flaky, flat-Earth attackers. But, in the case of efficient versus inefficient markets, there were good arguments on both sides. The academic community should be embarrassed by the long delay between Fama's groundbreaking 1964 study showing that markets are likely to be efficient and the wide acceptance of market efficiencies in the 1990s; it was one of the worst examples of groupthink ever.¹⁰

Thaler and his behavioral compatriots, of course, had much to do with this shift in attitudes. Part of the shift came from the persistence of well-trained academics, such as Thaler, in poking holes in efficient markets – and part of it came from the obvious success of practitioners in exploiting inefficiencies, culminating in the hedge-fund craze of the last 20 years.¹¹ Readers interested in the history of financial thinking will find Thaler's account of this transition, and of his role in it, valuable.

Beating the market

The beginnings of behavioral finance, and of Thaler's story, rely heavily on Shiller's [1981] finding that stock indices fluctuate much more than can be justified by subsequent changes in fundamental value.¹² (See Exhibit 1, created by Shiller but reprinted in *Misbehaving*, comparing actual levels of the S&P 500 with hypothetical fair values calculated by discounting all future dividend payments, where the calculation is done as if those future dividends had been known with perfect foresight.¹³)



Do Stock Prices Move Too Much? Comparison of Detrended Real Stock Prices with Hypothetical Perfect-Foresight Prices Based on Future Dividends, 1871-1979

Source: Shiller (1981), p. 422.

I believe that stocks fluctuate more than is justified by changes in fundamentals – the crash of 1987 is a case in point – but Shiller’s argument is not a fully convincing one. Stock prices are present values and, as such, are exquisitely sensitive to changes in both the discount rate (which Shiller’s study takes into account) and the expected long-term growth rate (which it does *not* take into account). In the 1930s and, to some extent, the 1970s, it looked as though economic and earnings growth would be permanently much lower than before. In the 1960s and 1990s, growth was expected to be much higher than before. Nobody had perfect forecasts or even tolerably good ones. Of course stock prices fluctuated more than they would have if good long-term growth forecasts had

been available!

Today, stock prices are fairly high while growth is widely expected to be slow. Should equity owners sell? I did, prior to the crash of 2008, and I now regret my decision every time the market hits a new high. I'm also afraid to get back in. It's difficult to time the market, even if behavioral finance teaches us that the price is not always right.

Value versus growth

If stock prices overreact to changes in information – a hypothesis strongly supported by Thaler – then one should be a value investor. Good news causes a stock to become overpriced, even after taking into account the increase in fundamental value caused by the news, and you should sell the stock; likewise, bad news causes a stock to become underpriced and you should buy it. A value strategy will take advantage of this effect.

But Thaler also indicates that stock prices can underreact. If that is the case, then you should be a momentum investor! The reason is that good news, not fully incorporated in the stock price, will cause the stock to rise further after you've bought it.

So...which is it? The verdict seems to be that stock prices both overreact and underreact, and it's hard to tell which is which in any given situation. Stock prices, instead of being right all the time (the efficient market hypothesis), will be wrong much of the time. If that is the case, you should mostly be a value investor since wrong prices are a mixture of too high and too low, and value strategies overweight the low ones. This intuition has been vindicated by decades of value-stock outperformance although the value effect is highly variable and cannot be relied on in any short or even medium-length time period. Nor is there any assurance that the value advantage will not be arbitrated away as more capital flows into such strategies.

Nudge

The last chapters of *Misbehaving* recap Thaler's effort, with co-author Cass Sunstein, to help people achieve their savings goals and otherwise improve their lives.¹⁴ This effort, labeled "libertarian paternalism" by the authors, has begun to transform defined-contribution retirement savings. The idea is counter to the top-down, regulatory impulse of government and seeks to improve people's behavior *as judged according to their own criteria*. This last part is important.

Behavioral scientists have discovered that small influences or "nudges" can have big results. An example is Thaler and Benartzi's [2004] "Save More Tomorrow™" plan which, in a test site, increased employee savings for retirement from 3.5% to 13.6% in just four years by asking employees to commit to save part of their future raises.¹⁵ Since the normal cost of a traditional pension is only 15% of payroll, this plan could achieve the savings needed to help make DC plans work as well as DB plans (although the needed investment return at a savings rate of 15% is higher than one can reasonably expect under current market conditions).

Other “nudges” are having similar success in other areas, such as getting taxpayers in the U.K. to pay their taxes more promptly to avoid penalties. The idea is not new; the speed limit is basically a nudge, rarely enforced but widely followed within a standard error of about 9 miles per hour. But libertarian paternalism, in an era when government is not widely trusted but people desperately need help in achieving many different goals, is a concept with promise.

Conclusion

Misbehaving is a welcome addition to the literature on behavioral economics and finance. Its benefit to investors is indirect because it is a book on economic concepts, not investment strategy. Moreover, as a memoirist telling a tale of scientific discovery, it helps to be a natural raconteur like the great Richard Feynman.¹⁶ Thaler’s storytelling is drier and more matter-of-fact. But those wishing to round out their general knowledge of important topics that affect investors will benefit from reading *Misbehaving*.

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1. Battaglia, Walter L. 2005. *The Graduate Student's Question: Before the Last Tree*, self-published, p. 177. Let it never be said that I do not cite left-wing authors.
 2. Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. Random House, New York. Shefrin, Hersh. 2002. *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*. Oxford University Press, Oxford, UK.
 3. *Misbehaving*, p. 12.
 4. Battaglia, Walter L. 2005. *The Graduate Student's Question: Before the Last Tree*, self-published, p. 177. Let it never be said that I do not cite left-wing authors.
 5. Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. Random House, New York. Shefrin, Hersh. 2002. *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*. Oxford University Press, Oxford, UK.
 6. *Misbehaving*, p. 12.
 7. Or *Homo economicus* in the classic literature (see the discussion of John Stuart Mill at http://en.wikipedia.org/wiki/Homo_economicus). However, the *H. economicus* of Mill (he did not use the phrase, but it is used in discussions of his work) is the economically rational component of the human animal, the part that counts for economic analysis; he is not the same as Thaler’s econ. For Thaler’s take on this question (which contrasts with mine), see Thaler, Richard H., 2000, “From Homo Economicus to Homo Sapiens,” *Journal of Economic Perspectives*, Vol. 14, no. 1 (Winter), pp. 133-141.
 8. In an earlier work, *Nudge* (co-authored with Cass R. Sunstein, Yale, 2008), Thaler really lets fly at conventional economists and their imaginary friends, the econs. He is shocked that some people think of their fellow human beings in such robotic, dehumanized terms. He is at peace only when wandering over to the psychology department, where (he thinks) a more realistic view of human nature prevails. All this drama is kind of cute; I’m wondering why he chose to leave it out of *Misbehaving*.
 9. *Misbehaving*, p. 221.
 10. The small-cap and value anomalies were discovered as early as 1978-1979 (although Fama and French took credit for them in 1992) but most academics (including Fama and French) explained these away as compensation for hidden risks, not true inefficiencies (alpha opportunities). Meanwhile, DFA and other managers made fortunes exploiting these anomalies. Benjamin Graham, with and without co-authors David Dodd and others, had advocated value investing two generations earlier (see, especially, Graham [1963], a brilliant and prophetic speech recently rediscovered by Jason Zweig and re-published, along with Zweig’s commentary, [here](#))
 11. Despite this success, William Sharpe’s [1991] “Arithmetic of Active Management” (*Financial Analysts Journal*, vol. 47, no.1 [January/February]) still holds, so there were just as many dollars lost as won, relative to market benchmarks, over this

period.

12. Shiller, Robert J. 1981. "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?" *American Economic Review* (June).
13. In the original article, Shiller describes the diagram as follows: "Real Standard and Poor's Composite Stock Price Index (solid line p) and ex post rational price (dotted line p^*), 1871-1979, both detrended by dividing a long-run exponential growth factor. The variable p^* is the present value of actual subsequent real detrended dividends, subject to an assumption about the present value in 1979 of dividends thereafter." (p. 422)
14. Thaler, Richard H., and Cass R. Sunstein. 2008. *Nudge: Improving Decisions about Health, Wealth, and Happiness*, Yale University Press, New Haven, CT.
15. Thaler, Richard H., and Shlomo Benartzi. 2004. "Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving," *Journal of Political Economy*, Vol. 112, No. 1, pp. S164-S187 (February).
16. Feynman, Richard P., and Ralph Leighton 1985. *Surely You're Joking, Mr. Feynman*, W. W. Norton, New York.