predictably irrational
revised and expanded edition

The Hidden Forces That Shape Our Decisions

Dan Ariely
Welcome to the revised and expanded edition of *Predictably Irrational*.

Since my early days as a patient in the burn department,* I have been acutely aware that humans engage in actions and make decisions that are often divorced from rationality, and sometimes very far from ideal. Over the years I’ve tried to understand the silly, dumb, odd, amusing, and sometimes dangerous mistakes we all make, in the hope that by understanding our irrational quirks, we can retrain ourselves to make better decisions.

My theoretical and applied interest in irrationality has guided me to the emerging field of behavioral economics, where I’ve embraced these quirks as a fundamental element of human behavior. In my research, I’ve looked at a range of human foibles, asking questions such as these: Why do we

---

*For more on what happened, see the Introduction.
get overexcited when something is FREE! What role do emotions play in our decisions? How does procrastination play games with us? What are the functions of our strange social norms? Why do we hang on to false beliefs despite evidence to the contrary? Trying to answer these questions has provided me with endless hours of fun, and the new understanding that it brought has changed my professional and personal life.

The experiments my colleagues and I have conducted helped us discover why our participants (and humans in general, including ourselves) fail to reason properly. It’s been satisfying to try to understand why we act the way we do, and fun to share our findings with people who have also wondered about their own decisions.

Nevertheless, before the financial crisis of 2008, I’d hit a lot of roadblocks when trying to expand on the implications of our ideas, experiments, and findings. For example, after I gave a presentation at a conference, a fellow I’ll call Mr. Logic (a composite of many people I have debated with over the years) buttonholed me.

“I enjoy hearing about all the different kinds of small-scale irrationalities that you demonstrate in your experiments,” he told me, handing me his card. “They’re quite interesting—great stories for cocktail parties.” He paused. “But you don’t understand how things work in the real world. Clearly, when it comes to making important decisions, all of these irrationalities disappear, because when it truly matters, people think carefully about their options before they act. And certainly when it comes to the stock market, where the decisions are critically important, all these irrationalities go away and rationality prevails.”

xii
This type of sentiment has not been restricted to Chicago economists—the elite of rational economic thought. I have often been amazed at the prevalence of this sentiment (I’d even dare to call it indoctrination) among people who have no particular training in economics. Somehow, the basic ideas of economics and the belief in overarching rationality have become so ingrained in our understanding of the social world around us that people from all walks of life seemed to accept them as basic laws of nature. When it came to the stock market, rationality and economics were thought to be as perfect a match as Fred Astaire and Ginger Rogers.

Whenever I’ve been confronted with this type of criticism, I would try to dig a bit deeper and inquire why the belief in rationality surfaced whenever people made decisions in the stock market. My conversational partner would usually try patiently to persuade me to his way of thinking. “Don’t you understand,” Mr. Logic would say, “that when there is a lot of money on the table, people think especially hard about their options and do their best to maximize their returns.”

“Doing their best,” I would say in rebuttal, “is not the same as being able to make optimal decisions. What about individual investors, who put all their money in their own company’s stock, don’t diversify enough, and lose a substantial part of their fortune? What about people who are approaching their sixtieth birthday and still don’t contribute to their 401(k)s? They’re giving up free money, because they can withdraw it, along with the match from their company, almost immediately.¹

¹ One of the main lessons of finance is that diversification is very important. When we work for a company, we already have a lot invested in it, in terms of our salary, so investing even more in the same company is very bad in terms of diversification.
“OK,” he would reluctantly agree. “It’s true that sometimes individual investors make mistakes, but professional investors must, by definition, act rationally because they deal with a lot of money and are paid to maximize their returns. On top of that, they work in a competitive environment that keeps them on their toes and ensures that they will always make normatively correct decisions.”

“Do you really want to argue,” I would ask, squinting at him, “that just because they are acting in their own best interests, professional investors never make big mistakes?”

“Not all the time,” Mr. Logic would calmly reply, “but in the aggregate they make normatively correct decisions. One person makes a random mistake in this direction, another makes a mistake in the other direction, and, collectively, all these mistakes cancel each other out—keeping the pricing in the market optimal.”

At this point in the conversation, I must admit, my patience would start to wear out. “What makes you think,” I would ask, “that the mistakes people make—even if those people are professional investors—are simply random? Think about Enron. Enron’s auditors were involved in substantial conflicts of interest, which ultimately led them to turn a blind eye (or perhaps two blind eyes, a stuffed nose, and plugged ears) to what was happening inside the company. Or what about the incentives of money managers, who make big bucks when their clients do, but don’t lose anything when the opposite happens? In such environments, where misaligned incentives and conflicts of interest are endemic, people would most likely make the same mistakes over and over, and these mistakes would not cancel each other out. In fact, these mistakes are the most dangerous because they aren’t random at all, and in the aggregate, can be devastating to the economy.”
At this point, Mr. Logic would take out the final weapon from his rational arsenal and remind me about (Zap! Pow!) the force of arbitrage—the magical power that eliminates the effects of individuals’ mistakes and makes the market, as a whole, act perfectly rationally. How does arbitrage fix the market? When the markets are free and frictionless—and even if most investors are irrational—a small set of supersmart, rational investors will take advantage of everyone else’s poor decisions (for example, they might buy a stock from those of us who mistakenly undervalue it), and in the process of competing for a bigger piece of the pie make a lot of money for themselves and restore market pricing to its rational and correct levels. “Arbitrage is the reason why your notion of behavioral economics is wrong,” Mr. Logic would tell me triumphantly.

Sadly, arbitrage is not an idea we can test empirically, because we cannot run one version of the stock market consisting of Joe Schmoes like you and me and another one consisting of Joe Schmoes plus some of these extra-special, super-rational investors—these Supermen who save the financial world from danger every day, while retaining their anonymous Clark Kent identities.

I wish I could tell you that I would often persuade my conversational partner to accept my point of view, but in almost all cases it would become very clear that neither of us was going to be converted to the other’s viewpoint. Of course, I ran into the biggest difficulties when arguing for irrationality with card-carrying rational economists, whose disregard of my experimental data was almost as intense as their nearly religious belief in rationality (if Adam Smith’s “invisible hand” doesn’t sound like God, I don’t know what does). This basic sentiment was expressed succinctly by two fabulous
Chicago economists, Steven Levitt and John List, suggesting that the practical usefulness of behavioral economics has been shown to be marginal at best:

*Perhaps the greatest challenge facing behavioral economics is demonstrating its applicability in the real world. In nearly every instance, the strongest empirical evidence in favor of behavioral anomalies emerges from the lab. Yet there are many reasons to suspect that these laboratory findings might fail to generalize to real markets. . . . For example, the competitive nature of markets encourages individualistic behavior and selects for participants with those tendencies. Compared to lab behavior, therefore, the combination of market forces and experience might lessen the importance of these qualities in everyday markets.*

Given these kinds of responses, I am often left scratching my head, wondering why so many smart people are convinced that irrationality disappears when it comes to important decisions about money. Why do they assume that institutions, competition, and market mechanisms can inoculate us against mistakes? If competition was sufficient to overcome irrationality, wouldn’t that eliminate brawls in sporting competitions, or the irrational self-destructive behaviors of professional athletes? What is it about circumstances involving money and competition that might make people more rational? Do the defenders of rationality believe that we have different brain mechanisms for making small versus large decisions and yet another yet another for dealing with the stock market? Or do they simply have a bone-deep
belief that the invisible hand and the wisdom of the markets guarantee optimal behavior under all conditions?

As a social scientist, I'm not sure which model describing human behavior in markets—rational economics, behavioral economics, or something else—is best, and I wish we could set up a series of experiments to figure this out. Unfortunately, since it is basically impossible to do any real experiments with the stock market, I’ve been left befuddled by the deep conviction in the rationality of the market. And I’ve wondered if we really want to build our financial institutions, our legal system, and our policies on such a foundation.

As I was asking myself these questions, something very big happened.

Soon after *Predictably Irrational* was published, in early 2008, the financial world blew to smithereens, like something in a science fiction movie.” Alan Greenspan, the formerly much-worshipped chairman of the Federal Reserve, told Congress in October 2008 that he was “shocked” (shocked!) that the markets did not work as anticipated, or automatically self-correct as they were supposed to. He said he made a mistake in assuming that the self-interest of organizations, specifically banks and others, was such that they were capable of protecting their own shareholders.

For my part, I was shocked that Greenspan, one of the tireless advocates of deregulation and a true believer in letting market forces have their way, would publicly admit that

---

*I don’t think that there was any causal connection between the publication of *Predictably Irrational* and the financial meltdown, but you must admit that the timing is curious.*

xvii
his assumptions about the rationality of markets were wrong. A few months before this confession, I could never have imagined that Greenspan would utter such a statement. Aside from feeling vindicated, I also felt that Greenspan’s confession was an important step forward. After all, they say that the first step toward recovery is admitting you have a problem.

Still, the terrible loss of homes and jobs has been a very high price to pay for learning that we might not be as rational as Greenspan and other traditional economists had thought. What we’ve learned is that relying on standard economic theory alone as a guiding principle for building markets and institutions might, in fact, be dangerous. It has become tragically clear that the mistakes we all make are not at all random, but part and parcel of the human condition. Worse, our mistakes of judgment can aggregate in the market, sparking a scenario in which, much like an earthquake, no one has any idea what is happening. (Al Roth, an economist at Harvard, and one of the smartest people I know, has summarized this issue by saying, “In theory, there is no difference between theory and practice, but in practice there is a great deal of difference.”)

A few days after Greenspan’s congressional testimony, the New York Times columnist David Brooks wrote that Greenspan’s confession would “. . . amount to a coming-out party for behavioral economists and others who are bringing sophisticated psychology to the realm of public policy. At least these folks have plausible explanations for why so many people could have been so gigantically wrong about the risks they were taking.”

All of a sudden, it looked as if some people were beginning to understand that the study of small-scale mistakes
was not just a source for amusing dinner-table anecdotes. I felt both exonerated and relieved.

While this is a very depressing time for the economy as a whole, and for all of us individually, the turnabout on Greenspan’s part has created new opportunities for behavioral economics, and for those willing to learn and alter the way they think and behave. From crisis comes opportunity, and perhaps this tragedy will cause us to finally accommodate new ideas, and—I hope—begin to rebuild.

Writing a book in the age of blogging and e-mail is an absolute treat because I get continuous feedback from readers, which causes me to learn about, reconsider, and rethink different aspects of human behavior. I’ve also had some very interesting discussions with readers about the links between behavioral economics and what’s happening in the financial markets, and about random topics relating to everyday irrationalities.

At the end of this book (following the material originally included in Predictably Irrational), I offer a few reflections and anecdotes about some of the chapters in the book, and my thoughts about the financial markets—what got us into this mess, how we can understand it from the perspective of behavioral economics, and how we can try to get out of it.

First, however, let’s explore some of our irrationalities.