

REVISED AND EXPANDED EDITION

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PREDICTABLY IRRATIONAL

The Hidden Forces That Shape Our Decisions

DAN ARIELY



**Predictably Irrational Revised and Expanded
Edition**

The Hidden Forces That Shape Our Decisions

Dan Ariely

*To my mentors, colleagues, and students—
who make research exciting*

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[A Note to Readers](#)

Dear readers, friends, and social science enthusiasts,

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 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."

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

“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. 2

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 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.”³

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.

Introduction

How an Injury Led Me to Irrationality and to the Research

Described Here

I have been told by many people that I have an unusual way of looking at the world. Over the last 20 years or so of my research career, it's enabled me to have a lot of fun figuring out what really influences our decisions in daily life (as opposed to what we think, often with great confidence, influences them).

Do you know why we so often promise ourselves to diet, only to have the thought vanish when the dessert cart rolls by?

Do you know why we sometimes find ourselves excitedly buying things we don't really need?

Do you know why we still have a headache after taking a one-cent aspirin, but why that same headache vanishes when the aspirin costs 50 cents?

Do you know why people who have been asked to recall the Ten

Commandments tend to be more honest (at least immediately afterward) than those who haven't? Or why honor codes actually do reduce dishonesty in the workplace?

By the end of this book, you'll know the answers to these and many other questions that have implications for your personal life, for your business life, and for the way you look at the world. Understanding the answer to the question about aspirin, for example, has implications not only for your

choice of drugs, but for one of the biggest issues facing our society: the cost and effectiveness of health insurance. Understanding the impact of the Ten Commandments in curbing dishonesty might help prevent the next Enron-like fraud. And understanding the dynamics of impulsive eating has implications for every other impulsive decision in our lives—

including why it's so hard to save money for a rainy day.

My goal, by the end of this book, is to help you fundamentally rethink what makes you and the people around you tick. I hope to lead you there by presenting a wide range of scientific experiments, findings, and anecdotes that are in many cases quite amusing. Once you see how systematic certain mistakes are—how we repeat them again and again—I think you will begin to learn how to avoid some of them.

But before I tell you about my curious, practical, entertaining (and in some cases even delicious) research on eating, shopping, love, money, procrastination, beer, honesty, and other areas of life, I feel it is important that I tell you about the origins of my somewhat unorthodox worldview—

and therefore of this book. Tragically, my introduction to this arena started with an accident many years ago that was anything but amusing.

ON WHAT WOULD otherwise have been a normal Friday afternoon in the life of an eighteen-year-old Israeli, everything changed irreversibly in a matter of a few seconds. An explosion of a large magnesium flare, the kind used to illuminate battlefields at night, left 70 percent of my body covered with third-degree burns.

The next three years found me wrapped in bandages in a hospital and then emerging into public only occasionally, dressed in a tight synthetic suit and mask that made me look like a crooked version of Spider-Man. Without the ability to participate in the same daily activities as my friends and family, I felt partially separated from society and as a consequence started to observe the very activities that were once my daily routine as if I were an outsider. As if I had come from a different culture (or planet), I started reflecting on the goals of different behaviors, mine and those of others. For example, I started wondering why I loved one girl but not another, why my daily

routine was designed to be comfortable for the physicians but not for me, why I loved going rock climbing but not studying history, why I cared so much about what other people thought of me, and mostly what it is about life that motivates people and causes us to behave as we do.

During the years in the hospital following my accident, I had extensive experience with different types of pain and a great deal of time between treatments and operations to reflect on it. Initially, my daily agony was largely played out in the “bath,” a procedure in which I was soaked in disinfectant solution, the bandages were removed, and the dead particles of

skin were scraped off. When the skin is intact, disinfectants create a low-level sting, and in general the bandages come off easily. But when there is little or no skin—as in my case because of my extensive burns—the

disinfectant stings unbearably, the bandages stick to the flesh, and removing them (often tearing them) hurts like nothing else I can describe.

Early on in the burn department I started talking to the nurses who administered my daily bath, in order to understand their approach to my treatment. The nurses would routinely grab hold of a bandage and rip it off as fast as possible, creating a relatively short burst of pain; they would repeat this process for an hour or so until they had removed every one of the bandages. Once this process was over I was covered with ointment and with new bandages, in order to repeat the process again the next day.

The nurses, I quickly learned, had theorized that a vigorous tug at the bandages, which caused a sharp spike of pain, was preferable (to the patient) to a slow pulling of the wrappings, which might not lead to such a severe spike of pain but would extend the treatment, and therefore be more painful overall. The nurses had also concluded that there was no difference between two possible methods: starting at the most painful part of the body and working their way to the least painful part; or starting at the least painful part and advancing to the most excruciating areas.

As someone who had actually experienced the pain of the bandage

removal process, I did not share their beliefs (which had never been scientifically tested). Moreover, their theories gave no consideration to the amount of fear that the patient felt anticipating the treatment; to the difficulties of dealing with fluctuations of pain over time; to the unpredictability of not knowing when the pain will start and ease off; or to the benefits of being comforted with the possibility that the pain would be reduced over time. But, given my helpless position, I had little influence over the way I was treated.

As soon as I was able to leave the hospital for a prolonged period (I would still return for occasional operations and treatments for another five years), I began studying at Tel Aviv University. During my first semester, I took a class that profoundly changed my outlook on research and largely determined my future. This was a class on the physiology of the brain, taught by professor Hanan Frenk. In addition to the fascinating material Professor Frenk presented about the workings of the brain, what struck me most about this class was his attitude to questions and alternative theories.

Many times, when I raised my hand in class or stopped by his office to suggest a different interpretation of some results he had presented, he replied that my theory was indeed a possibility (somewhat unlikely, but a possibility nevertheless)—and would then challenge me to propose an empirical test to distinguish it from the conventional theory.

Coming up with such tests was not easy, but the idea that science is an empirical endeavor in which all the participants, including a new student like myself, could come up with alternative theories, as long as they found empirical ways to test these theories, opened up a new world to me. On one of my visits to Professor Frenk's office, I proposed a theory explaining how a certain stage of epilepsy developed, and included an idea for how one might test it in rats.

Professor Frenk liked the idea, and for the next three months I operated on about 50 rats, implanting catheters in their spinal cords and giving them different substances to create and reduce their epileptic seizures. One of the practical problems with this approach was that the movements of my hands were very limited, because of my injury, and as a consequence it was very difficult for me to operate on the rats. Luckily for me, my best friend, Ron

Weisberg (an avid vegetarian and animal lover), agreed to come with me to the lab for several weekends and help me with the procedures—a true test of friendship if ever there was one.

In the end, it turned out that my theory was wrong, but this did not diminish my enthusiasm. I was able to learn something about my theory, after all, and even though the theory was wrong, it was good to know this with high certainty. I always had many questions about how things work and how people behave, and my new understanding—that science provides the tools and opportunities to examine anything I found interesting—lured me into the study of how people behave.

With these new tools, I focused much of my initial efforts on

understanding how we experience pain. For obvious reasons I was most concerned with such situations as the bath treatment, in which pain must be delivered to a patient over a long period of time. Was it possible to reduce the overall agony of such pain? Over the next few years I was able to carry out a set of laboratory experiments on myself, my friends, and volunteers—

using physical pain induced by heat, cold water, pressure, loud sounds, and even the psychological pain of losing money in the stock market—to probe for the answers.

By the time I had finished, I realized that the nurses in the burn unit were kind and generous individuals (well, there was one exception) with a lot of experience in soaking and removing bandages, but they still didn't have the right theory about what would minimize their patients' pain. How could they be so wrong, I wondered, considering their vast experience?

Since I knew these nurses personally, I knew that their behavior was not due to maliciousness, stupidity, or neglect. Rather, they were most likely the victims of inherent biases in their perceptions of their patients' pain—biases that apparently were not altered even by their vast experience.

For these reasons, I was particularly excited when I returned to the burn department one morning and presented my results, in the hope of

influencing the bandage removal procedures for other patients. It turns out, I told the nurses and physicians, that people feel less pain if treatments (such as removing bandages in a bath) are carried out with lower intensity and longer duration than if the same goal is achieved through high intensity and a shorter duration. In other words, I would have suffered less if they had pulled the bandages off slowly rather than with their quick-pull method.

The nurses were genuinely surprised by my conclusions, but I was

equally surprised by what Etty, my favorite nurse, had to say. She admitted that their understanding had been lacking and that they should change their methods. But she also pointed out that a discussion of the pain inflicted in the bath treatment should also take into account the psychological pain that the nurses experienced when their patients screamed in agony. Pulling the bandages quickly might be more understandable, she explained, if it were indeed the nurses' way of shortening their own torment (and their faces often did reveal that they were suffering). In the end, though, we all agreed that the procedures should be changed, and indeed, some of the nurses followed my recommendations.

My recommendations never changed the bandage removal process on a

greater scale (as far as I know), but the episode left a special impression on me. If the nurses, with all their experience, misunderstood what constituted reality for the patients they cared so much about, perhaps other people similarly misunderstand the consequences of their behaviors and, for that reason, repeatedly make the wrong decisions. I decided to expand my scope of research, from pain to the examination of cases in which individuals make repeated mistakes—without being able to learn much from their experiences.

THIS JOURNEY INTO the many ways in which we are all irrational, then, is what this book is about. The discipline that allows me to play with this subject matter is called *behavioral economics*, or judgment and decision making (JDM).

Behavioral economics is a relatively new field, one that draws on

aspects of both psychology and economics. It has led me to study

everything from our reluctance to save for retirement to our inability to think clearly during sexual arousal. It's not just the behavior that I have tried to understand, though, but also the decision-making processes behind such behavior—yours, mine, and everybody else's. Before I go on, let me try to explain, briefly, what behavioral economics is all about and how it is different from standard economics. Let me start out with a bit of

Shakespeare:

*What a piece of work is a man! how noble in reason! how
infinite in faculty! in form and moving how express and
admirable! in action how like an angel! in apprehension how
like a god! The beauty of the world, the paragon of animals. —*

from Act II, scene 2, of *Hamlet*

The predominant view of human nature, largely shared by economists, policy makers, nonprofessionals, and everyday Joes, is the one reflected in this quotation. Of course, this view is largely correct. Our minds and bodies are capable of amazing acts. We can see a ball thrown from a distance, instantly calculate its trajectory and impact, and then move our body and hands in order to catch it. We can learn new languages with ease,

particularly as young children. We can master chess. We can recognize thousands of faces without confusing them. We can produce music,

literature, technology, and art—and the list goes on and on.

Shakespeare is not alone in his appreciation for the human mind. In fact, we all think of ourselves along the lines of Shakespeare's depiction (although we do realize that our neighbors, spouses, and bosses do not always live up to this standard). Within the domain of science, these assumptions about our ability for perfect reasoning have found their way into economics. In economics, this very basic idea, called *rationality*,

provides the foundation for economic theories, predictions, and recommendations.

From this perspective, and to the extent that we all believe in human rationality, we are all economists. I don't mean that each of us can intuitively develop complex game-theoretical models or understand the generalized axiom of revealed preference (GARP); rather, I mean that we hold the basic beliefs about human nature on which economics is built. In this book, when I mention the *rational* economic model, I refer to the basic assumption that most economists and many of us hold about human nature—the simple and compelling idea that we are capable of making the right decisions for ourselves.

Although a feeling of awe at the capability of humans is clearly justified, there is a large difference between a deep sense of admiration and the assumption that our reasoning abilities are perfect. In fact, this book is about human *irrationality*—about our distance from perfection. I believe that recognizing where we depart from the ideal is an important part of the quest to truly understand ourselves, and one that promises many practical benefits. Understanding irrationality is important for our everyday actions and decisions, and for understanding how we design our environment and the choices it presents to us.

My further observation is that we are not only irrational, but *predictably irrational*—that our irrationality happens the same way, again and again.

Whether we are acting as consumers, businesspeople, or policy makers, understanding how we are predictably irrational provides a starting point for improving our decision making and changing the way we live for the better.

This leads me to the real “rub” (as Shakespeare might have called it) between conventional economics and behavioral economics. In

conventional economics, the assumption that we are all rational implies that, in everyday life, we compute the value of all the options we face and

then follow the best possible path of action. What if we make a mistake and do something irrational? Here, too, traditional economics has an answer:

“market forces” will sweep down on us and swiftly set us back on the path of righteousness and rationality. On the basis of these assumptions, in fact, generations of economists since Adam Smith have been able to develop far-reaching conclusions about everything from taxation and health-care policies to the pricing of goods and services.

But, as you will see in this book, we are really far less rational than standard economic theory assumes. Moreover, these irrational behaviors of ours are neither random nor senseless. They are systematic, and since we repeat them again and again, predictable. So, wouldn't it make sense to modify standard economics, to move it away from naive psychology (which often fails the tests of reason, introspection, and—most important—

empirical scrutiny)? This is exactly what the emerging field of behavioral economics, and this book as a small part of that enterprise, is trying to accomplish.

AS YOU WILL see in the pages ahead, each of the chapters in this book is based on a few experiments I carried out over the years with some terrific colleagues (at the end of the book, I have included short biographies of my amazing collaborators). Why experiments? Life is complex, with multiple forces simultaneously exerting their influences on us, and this complexity makes it difficult to figure out exactly how each of these forces shapes our behavior. For social scientists, experiments are like microscopes or strobe lights. They help us slow human behavior to a frame-by-frame narration of events, isolate individual forces, and examine those forces carefully and in more detail. They let us test directly and unambiguously what makes us tick.

There is one other point I want to emphasize about experiments. If the lessons learned in any experiment were limited to the exact environment of the experiment, their value would be limited. Instead, I would like you to think about experiments as an illustration of a general principle, providing insight into how we think and how we make decisions—not only in the

context of a particular experiment but, by extrapolation, in many contexts of life.

In each chapter, then, I have taken a step in extrapolating the findings from the experiments to other contexts, attempting to describe some of their possible implications for life, business, and public policy. The implications I have drawn are, of course, just a partial list.

To get real value from this, and from social science in general, it is important that you, the reader, spend some time thinking about how the principles of human behavior identified in the experiments apply to your life. My suggestion to you is to pause at the end of each chapter and

consider whether the principles revealed in the experiments might make your life better or worse, and more importantly what you could do

differently, given your new understanding of human nature. This is where the real adventure lies.

And now for the journey.

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CHAPTER 1

The Truth about Relativity

Why Everything Is Relative—Even When It Shouldn't Be

One day while browsing the World Wide Web (obviously for work—not just wasting time), I stumbled on the following ad, on the Web site of a magazine, the *Economist*.

I read these offers one at a time. The first offer—the Internet subscription for \$59—seemed reasonable. The second option—the \$125 print subscription—seemed a bit expensive, but still reasonable.

But then I read the third option: a print *and* Internet subscription for \$125. I read it twice before my eye ran back to the previous options. Who would want to buy the print option alone, I wondered, when both the Internet and the print subscriptions were offered for the same price? Now, the print-only option may have been a typographical error, but I suspect that

the clever people at the *Economist*'s London offices (and they are clever—and quite mischievous in a British sort of way) were actually manipulating me. I am pretty certain that they wanted me to skip the Internet-only option (which they assumed would be my choice, since I was reading the

advertisement on the Web) and jump to the more expensive option: Internet and print.

But how could they manipulate me? I suspect it's because the

Economist's marketing wizards (and I could just picture them in their school ties and blazers) knew something important about human behavior: humans rarely choose things in absolute terms. We don't have an internal value meter that tells us how much things are worth. Rather, we focus on the relative advantage of one thing over another, and estimate value accordingly. (For instance, we don't know how much a six-cylinder car is worth, but we can assume it's more expensive than the four-cylinder model.)

In the case of the *Economist*, I may not have known whether the Internet-only subscription at \$59 was a better deal than the print-only option at \$125. But I certainly knew that the print-and-Internet option for \$125 was better than the print-only option at \$125. In fact, you could reasonably deduce that in the combination package, the Internet subscription is free!

“It’s a bloody steal—go for it, governor!” I could almost hear them shout from the riverbanks of the Thames. And I have to admit, if I had been inclined to subscribe I probably would have taken the package deal myself.

(Later, when I tested the offer on a large number of participants, the vast majority preferred the Internet-and-print deal.)

So what was going on here? Let me start with a fundamental

observation: most people don’t know what they want unless they see it in context. We don’t know what kind of racing bike we want—until we see a champ in the Tour de France ratcheting the gears on a particular model. We don’t know what kind of speaker system we like—until we hear a set of speakers that sounds better than the previous one. We don’t even know what we want to do with our lives—until we find a relative or a friend who is doing just what we think we should be doing. Everything is relative, and that’s the point. Like an airplane pilot landing in the dark, we want runway lights on either side of us, guiding us to the place where we can touch down our wheels.

In the case of the *Economist*, the decision between the Internet-only and print-only options would take a bit of thinking. Thinking is difficult and sometimes unpleasant. So the *Economist*’s marketers offered us a no-brainer: relative to the print-only option, the print-and-Internet option looks clearly superior.

The geniuses at the *Economist* aren’t the only ones who understand the importance of relativity. Take Sam, the television salesman. He plays the same general type of trick on us when he decides which televisions to put together on display:

36-inch Panasonic for \$690

42-inch Toshiba for \$850

50-inch Philips for \$1,480

Which one would you choose? In this case, Sam knows that customers find it difficult to compute the value of different options. (Who really knows if the Panasonic at \$690 is a better deal than the Philips at \$1,480?) But Sam also knows that given three choices, most people will take the middle choice (as in landing your plane between the runway lights). So guess which television Sam prices as the middle option? That's right—the one he wants to sell!

Of course, Sam is not alone in his cleverness. The *New York Times* ran a story recently about Gregg Rapp, a restaurant consultant, who gets paid to work out the pricing for menus. He knows, for instance, how lamb sold this year as opposed to last year; whether lamb did better paired with squash or with risotto; and whether orders decreased when the price of the main course was hiked from \$39 to \$41.

One thing Rapp has learned is that high-priced entrées on the menu boost revenue for the restaurant—even if no one buys them. Why? Because even though people generally won't buy the most expensive dish on the menu, they will order the second most expensive dish. Thus, by creating an expensive dish, a restaurateur can lure customers into ordering the second most expensive choice (which can be cleverly engineered to deliver a higher profit margin).⁴

SO LET'S RUN through the *Economist's* sleight of hand in slow motion.

As you recall, the choices were:

1. Internet-only subscription for \$59.
2. Print-only subscription for \$125.
3. Print-and-Internet subscription for \$125.

When I gave these options to 100 students at MIT’s Sloan School of Management, they opted as follows:

1. Internet-only subscription for \$59—**16 students**
2. Print-only subscription for \$125—**zero students**
3. Print-and-Internet subscription for \$125—**84 students**

So far these Sloan MBAs are smart cookies. They all saw the advantage in the print-and-Internet offer over the print-only offer. But were they influenced by the mere presence of the print-only option (which I will henceforth, and for good reason, call the “decoy”). In other words, suppose that I removed the decoy so that the choices would be the ones seen in the figure below:

Economist.com	SUBSCRIPTIONS
OPINION	Welcome to
WORLD	The Economist Subscription Centre
BUSINESS	Pick the type of subscription you want to buy or renew.
FINANCE & ECONOMICS	☐ Economist.com subscription - US \$59.00
SCIENCE & TECHNOLOGY	One-year subscription to Economist.com.
PEOPLE	Includes online access to all articles from <i>The Economist</i> since 1997.
BOOKS & ARTS	☐ Print & web subscription - US \$125.00
MARKETS & DATA	One-year subscription to the print edition of <i>The Economist</i> and online access to all articles from <i>The Economist</i> since 1997.
DIVERSIONS	

Economist.com	SUBSCRIPTIONS
OPINION	Welcome to
WORLD	The Economist Subscription Centre
BUSINESS	Pick the type of subscription you want to buy or renew,
FINANCE & ECONOMICS	☐ Economist.com subscription - US \$59.00
SCIENCE & TECHNOLOGY	One-year subscription to Economist.com, Includes online access to all articles from The Economist since 1997, (16)
PEOPLE	☐ Print subscription - US \$125.00
BOOKS & ARTS	One-year subscription to the print edition of The Economist, (0)
MARKETS & DATA	☐ Print & web subscription - US \$125.00
ENTERTAINMENT	One-year subscription to the print edition of The Economist and online access to all articles from The Economist since 1997. (84)

Economist.com	SUBSCRIPTIONS
OPINION	Welcome to
WORLD	The Economist Subscription Centre
BUSINESS	Pick the type of subscription you want to buy or renew,
FINANCE & ECONOMICS	☐ Economist.com subscription - US \$59.00
SCIENCE & TECHNOLOGY	One-year subscription to Economist.com, Includes online access to all articles from The Economist since 1997, (68)
PEOPLE	☐ Print & web subscription - US \$125.00
BOOKS & ARTS	One-year subscription to the print edition of The Economist and online access to all articles from The Economist since 1997, (32)
MARKETS & DATA	
ENTERTAINMENT	

Would the students respond as before (16 for the Internet only and 84 for the combination)?

Certainly they would react the same way, wouldn't they? After all, the option I took out was one that no one selected, so it should make no difference. Right?

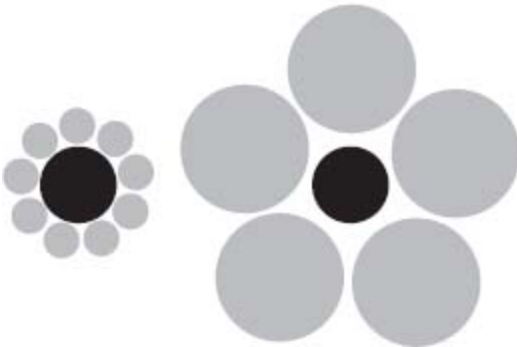
Au contraire! This time, 68 of the students chose the Internet-only option for \$59, up from 16 before. And only 32 chose the combination

[subscription for \\$125, down from 84 before.*](#)

What could have possibly changed their minds? Nothing rational, I

assure you. It was the mere presence of the decoy that sent 84 of them to the print-and-Internet option (and 16 to the Internet-only option). And the

absence of the decoy had them choosing differently, with 32 for print-and-Internet and 68 for Internet-only.



This is not only irrational but predictably irrational as well. Why? I'm glad you asked.

LET ME OFFER you this visual demonstration of relativity.

As you can see, the middle circle can't seem to stay the same size.

When placed among the larger circles, it gets smaller. When placed among the smaller circles, it grows bigger. The middle circle is the same size in both positions, of course, but it appears to change depending on what we place next to it.

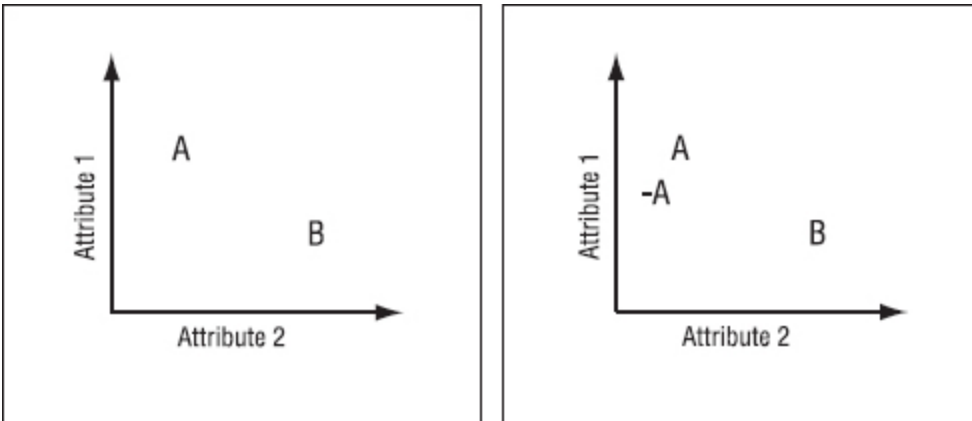
This might be a mere curiosity, but for the fact that it mirrors the way the mind is wired: we are always looking at the things around us in relation to others. We can't help it. This holds true not only for physical things—

toasters, bicycles, puppies, restaurant entrées, and spouses—but for experiences such as vacations and educational options, and for ephemeral things as well: emotions, attitudes, and points of view.

We always compare jobs with jobs, vacations with vacations, lovers with lovers, and wines with wines. All this relativity reminds me of a line from the film *Crocodile Dundee*, when a street hoodlum pulls a switchblade against our hero, Paul Hogan. “You call that a knife?” says Hogan

incredulously, withdrawing a bowie blade from the back of his boot. “Now *this*,” he says with a sly grin, “is a knife.”

RELATIVITY IS (RELATIVELY) easy to understand. But there’s one aspect of relativity that consistently trips us up. It’s this: we not only tend to compare things with one another but also tend to focus on comparing things that are



easily comparable—and avoid comparing things that cannot be compared easily.

That may be a confusing thought, so let me give you an example.

Suppose you’re shopping for a house in a new town. Your real estate agent guides you to three houses, all of which interest you. One of them is a contemporary, and two are colonials. All three cost about the same; they are all equally desirable; and the only difference is that one of the colonials (the

“decoy”) needs a new roof and the owner has knocked a few thousand dollars off the price to cover the additional expense.

So which one will you choose?

The chances are good that you will *not* choose the contemporary and you will *not* choose the colonial that needs the new roof, but you will choose the other colonial. Why? Here’s the rationale (which is actually quite irrational). We like to make decisions based on comparisons. In the case of the three houses, we don’t know much about the contemporary (we don’t

have another house to compare it with), so that house goes on the sidelines. But we do know that one of the colonials is better than the other one. That is, the colonial with the good roof is better than the one with the bad roof. Therefore, we will reason that it is better overall and go for the colonial with the good roof, spurning the contemporary and the colonial that needs a new roof.

To better understand how relativity works, consider the following illustration:

In the left side of this illustration we see two options, each of which is better on a different attribute. Option (A) is better on attribute 1—let's say quality. Option (B) is better on attribute 2—let's say beauty. Obviously

these are two very different options and the choice between them is not simple. Now consider what happens if we add another option, called (-A) (see the right side of the illustration). This option is clearly worse than option (A), but it is also very similar to it, making the comparison between them easy, and suggesting that (A) is not only better than (-A) but also better than (B).

In essence, introducing (-A), the decoy, creates a simple relative comparison with (A), and hence makes (A) look better, not just relative to (-A), but overall as well. As a consequence, the inclusion of (-A) in the set, even if no one ever selects it, makes people more likely to make (A) their final choice.

Does this selection process sound familiar? Remember the pitch put together by the *Economist*? The marketers there knew that we didn't know whether we wanted an Internet subscription or a print subscription. But they figured that, of the three options, the print-and-Internet combination would be the offer we would take.

Here's another example of the decoy effect. Suppose you are planning a honeymoon in Europe. You've already decided to go to one of the major romantic cities and have narrowed your choices to Rome and Paris, your

two favorites. The travel agent presents you with the vacation packages for each city, which includes airfare, hotel accommodations, sightseeing tours, and a free breakfast every morning. Which would you select?

For most people, the decision between a week in Rome and a week in Paris is not effortless. Rome has the Coliseum; Paris, the Louvre. Both have a romantic ambience, fabulous food, and fashionable shopping. It's not an easy call. But suppose you were offered a third option: Rome without the free breakfast, called-Rome or the decoy.

If you were to consider these three options (Paris, Rome, -Rome), you would immediately recognize that whereas Rome with the free breakfast is about as appealing as Paris with the free breakfast, the inferior option, which is Rome without the free breakfast, is a step down. The comparison between the clearly inferior option (-Rome) makes Rome with the free breakfast seem even better. In fact, -Rome makes Rome with the free breakfast look so good that you judge it to be even better than the difficult-to-compare option, Paris with the free breakfast.

ONCE YOU SEE the decoy effect in action, you realize that it is the secret agent in more decisions than we could imagine. It even helps us decide whom to date—and, ultimately, whom to marry. Let me describe an experiment that explored just this subject.

As students hurried around MIT one cold weekday, I asked some of them whether they would allow me to take their pictures for a study. In some cases, I got disapproving looks. A few students walked away. But most of them were happy to participate, and before long, the card in my digital camera was filled with images of smiling students. I returned to my office and printed 60 of them—30 of women and 30 of men.

The following week I made an unusual request of 25 of my undergraduates. I asked them to pair the 30 photographs of men and the 30