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About the Author

Richard H. Thaler is the Ralph and Dorothy Keller Distinguished Service Professor of Behavioral Science and Economics and the director of the Center for Decision Research at the University of Chicago's Graduate School of Business. He was awarded the Nobel Prize in Economics in 2017.

Acclaim for the original edition of *Nudge*

"*Nudge* has changed the world. You may not realize it, but as a result of its findings you're likely to live longer, retire richer, and maybe even save other people's lives."
—*The Times* (London)

"Probably the most influential popular science book ever written."
—BBC Radio 4

"This gem of a book ... is a must read."
—Daniel Kahneman, Nobel Prize–winning author of *Thinking, Fast and Slow*

"Engaging and insightful ... The conceptual argument is powerful, and most of the authors' suggestions are common sense at its best .... For that we should all applaud loudly."
—*The New York Times Book Review*

"This book is terrific. It will change the way you think, not only about the world around you and some of its bigger problems, but also about yourself."
—Michael Lewis, author of *Moneyball* and *Liar's Poker*

"One of the few books ... that fundamentally changed the way I think about the world."
—Steven D. Levitt, coauthor of *Freakonomics*

"Utterly brilliant ... *Nudge* won't nudge you—it will knock you off your feet."
—Daniel Gilbert, author of *Stumbling on Happiness*

"*Nudge* is as important a book as any I've read in perhaps twenty years. It is a book that people interested in any aspect of public policy should read. It is a book that people interested in politics should read. It is a book that people interested in ideas about human freedom should read. It is a book that people interested in promoting human welfare should read. If you're not interested in any of these topics, you can read something else."
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"Save the planet, save yourself. Do-gooders, policymakers, this one's for you."
—*Newsweek*

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—*Slate*

"*Nudge* helps us understand our weaknesses, and suggests savvy ways to counter them."

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"Always stimulating ... An entertaining book that also deeply informs."

—*Barron's*

"Entertaining, engaging, and well written ... Highly recommended."

—*Choice*

"This *Poor Richard's Almanack* for the twenty-first century ... shares both the sagacity and the witty and accessible style of its eighteenth-century predecessor."

—*Law and Politics Book Review*

"There are superb insights in *Nudge*."

—*Financial Times*

For France,
who (still) makes everything in life better
—RHT

For Samantha,
who knows what matters
—CRS

Preface to the Final Edition

The original version of *Nudge* was published in the spring of 2008. While we were writing it, Thaler got his first iPhone and Sunstein his first BlackBerry. In his first term as a United States senator, our former University of Chicago colleague Barack Obama had decided to challenge Hillary Clinton for the Democratic nomination for president. Senator Joe Biden was also doing that, without a whole lot of success. Real estate developer and reality television star Donald Trump was proclaiming that Clinton was "fantastic" and would "make a great president."[1] A financial crisis was emerging. Taylor Swift was nineteen years old (and had not yet won a Grammy), and Greta Thunberg was just five.

To say the least, a few things have happened in the intervening years. But *Nudge* continues to attract interest, and we have not been much inclined to tinker with it. Why a revision now? As we discuss in the book, status quo bias is a strong force.

Very much in keeping with the book's spirit, we were induced to emerge from our slumber by a seemingly small matter. The contracts for the American and British paperback editions had expired, and new ones had to be agreed upon. Editors asked whether we might want to add a new chapter or possibly make other changes. Our immediate reaction was to say no. After all, Thaler is famously lazy and Sunstein could have written an entirely new book in the time it would take to get the slow-fingered Thaler to agree to anything. Besides, we were proud of the book, and why mess with a good thing?

But then we started thumbing through copies we managed to find in our home offices, where we found ourselves during the year of COVID-19. The first chapter mentions the then-snazzy but now-obsolete iPod. Jeez, that seems a bit dated. And an entire chapter is devoted to what we still think was an excellent solution to the problem of making it possible for same-sex couples to marry. Since then, many countries somehow managed to solve that very problem in a way we had not imagined was politically possible. They just passed laws making such marriages legal. So, yeah, maybe some parts of the book could use a bit of tidying up.

So, it came to pass that in the summer of 2020, a summer like no other in our lifetimes, we decided to poke around the manuscript and see if we wanted to make some changes. It helped that Thaler managed to find a set of Microsoft Word files that had been used for what we called the international edition, and those files were (barely) usable. Without those files, this edition would not exist, because we would never have wanted to start over from scratch. We admit to then falling into a bit of a trap. We are supposedly experts on biases in human decision making, but that definitely does *not* mean we are immune to them! Just the opposite.

We are not sure that this particular trap has a name, but it is familiar to everyone. Let's call it the "while we are at it" bias. Home improvement projects are often settings where this bias is observed. A family decides that after twenty years of neglect, the kitchen really needs to be upgraded. The initial to-do list includes new appliances and

Introduction

The Cafeteria

Imagine that a friend of yours, Carolyn, is the director of food services for a large city school system. She is in charge of hundreds of schools, and hundreds of thousands of kids eat in her cafeterias every day. Carolyn has formal training in nutrition (a master's degree from the state university), and she is a creative type who likes to think about things in nontraditional ways.

One evening, over a good bottle of wine, she and her friend Adam, a statistically oriented management consultant who has worked with supermarket chains, hatched an interesting idea. Without changing any menus, they would run some experiments in her schools to determine whether the way the food is displayed and arranged might influence the choices kids make. Carolyn gave the directors of dozens of school cafeterias specific instructions on how to display the food choices. In some schools the desserts were placed first, in others last, and in still others in a separate line. The locations of various food items varied from one school to another. In some schools the french fries were at eye level, but in other schools it was the carrot sticks that were made more salient.

From his experience in designing supermarket floor plans, Adam suspected that the results would be significant. He was right. Simply by rearranging the cafeteria, Carolyn was able to noticeably increase or decrease the consumption of many food items. From this experience she learned a big lesson: small changes in context can greatly influence schoolchildren, just as they can greatly influence adults. The influence can be exercised for better or for worse. For example, Carolyn knows that she can increase consumption of healthy foods and decrease consumption of unhealthy ones.

With hundreds of schools to work with, and a team of graduate-student volunteers recruited to collect and analyze the data, Carolyn now understands that she has considerable power to influence what kids eat. She is pondering what to do with her newfound power. Here are some suggestions she has received from her usually sincere but occasionally mischievous friends and coworkers:

1. Arrange the food to make the students best off, all things considered.

2. Choose the food order at random.

3. Try to arrange the food to get the kids to pick the same foods they would choose on their own.

4. Maximize the sales of the items from the suppliers who are willing to offer the largest bribes.

5. Maximize profits, period.

Option 1 has obvious appeal, yet it does seem a bit intrusive, even paternalistic. But the alternatives are worse! Option 2, arranging the food at random, could be considered fair-minded and principled, and it is in one sense neutral. But a random order makes no sense in a cafeteria. On efficiency grounds, the salad dressing should be placed next to the salad, not with the desserts. Also, if the orders are randomized across schools, then the children at some schools will have less healthy diets than those at other schools. Is this desirable? Should Carolyn choose that kind of neutrality, if she can easily make most students better off, in part by improving their health?

Option 3 might seem to be an honorable attempt to avoid intrusion: try to mimic what the children would choose for themselves. Maybe that is really the neutral choice, and maybe Carolyn should neutrally follow people's wishes (at least where she is dealing with older students). But a little thought reveals that this is a difficult option to implement. Carolyn's experiment with Adam proves that what kids choose depends on the order in which the items are displayed. What, then, are the "true preferences" of the children? What does it mean to say that Carolyn should try to figure out what the students would choose "on their own"? In a cafeteria, it is impossible to avoid some way of organizing food. And many of the same considerations would apply if she were serving adults rather than children.

Option 4 might appeal to a corrupt person in Carolyn's job, and manipulating the order of the food items would put yet another weapon in the arsenal of available methods to exploit power. But Carolyn is honorable and honest, so she does not give this option any thought. (Not everyone would be this principled, alas.) Like Options 2 and 3, Option 5 has some appeal, especially if Carolyn thinks the best cafeteria is the one that makes the most money. But should she really try to maximize profits if the result is to make children less healthy, especially when she works for the school district?

Carolyn is what we call a *choice architect*. A choice architect has the responsibility for organizing the context in which people make decisions. Although Carolyn is a figment of our imagination, many real people turn out to be choice architects, most without realizing it. Some of them even run cafeterias. If you are a doctor and describe the alternative treatments available to a patient, you are a choice architect. If you create the forms or the website that new employees use to choose among various employee benefits, you are a choice architect. If you design the ballot voters use to choose candidates, you are a choice architect. If you organize a drugstore or a grocery, you are a choice architect (and you confront many of the questions that Carolyn did). If you are a parent describing possible educational options to your son or daughter, you are a choice architect. If you are a salesperson, you are a choice architect (but you already knew that).

There are many parallels between choice architecture and more traditional forms of architecture. A crucial parallel is that there is no such thing as a "neutral" design. Consider the job of designing a new office building. The architect is given some requirements. There must be room for a lobby, 120 offices, thirteen conference rooms of various sizes, a room large enough to have everyone meet together, and so forth. The building must sit on a specified site. Hundreds of other constraints will be imposed —some legal, some aesthetic, some practical. In the end, the architect must come up with an actual building with doors, stairs, windows, and hallways. As good architects know, seemingly arbitrary decisions, such as where to locate the bathrooms, will have subtle influences on how the people who use the building interact. Every trip to the

bathroom creates an opportunity to run into colleagues (for better or for worse). A good building is not merely attractive; it also "works."

As we shall see, small and apparently insignificant details can have major impacts on people's behavior. A good rule of thumb is to assume that everything matters. In many cases, the power of these small details comes from focusing people's attention in a particular direction. A wonderful example of this principle comes from, of all places, the men's toilets at Schiphol Airport in Amsterdam. At one point, the authorities etched the image of a black housefly into each urinal. It seems that men often do not pay much attention to where they aim, which can create a bit of a mess, but if they see a target, attention and therefore accuracy are much increased. According to the man who came up with the idea, it works wonders. "It improves the aim," says Aad Kieboom. "If a man sees a fly, he aims at it." Kieboom, an economist, directed Schiphol's building expansion. He reports that etchings reduced "spillage" by 80 percent, a number we are unable to verify. However, we can report that after this example appeared in the first edition of this book, we began seeing those flies in other airports around the world. And yes, we are aware of the availability heuristic, to be discussed later.

The insight that everything matters can be both paralyzing and empowering. Good architects realize that although they can't build the perfect building, they can make some design choices that will have beneficial effects. The location of the coffee machines, for example, may influence workplace interaction. Policymakers can often do the equivalent of painting a fly—for example, by telling people clearly and conspicuously, on their credit card bills, that they might be subject to late fees and overuse fees. If you paint lines on the sidewalk where people wait to enter a supermarket during a pandemic, you can promote social distancing. And just as a building architect must eventually produce the plans for an building, a choice architect like Carolyn must choose a particular arrangement of the food options at lunch, and by so doing she can influence what people eat. She can nudge.[fn1]

Libertarian Paternalism

If, all things considered, you think that Carolyn should take the opportunity to nudge the kids toward food that is better for them, Option 1, then we welcome you to our movement: *libertarian paternalism*. We are keenly aware that this term is not one that many readers will find immediately endearing. Both words are somewhat off-putting, weighed down by stereotypes from popular culture and politics that make them unappealing to many. Even worse, the concepts seem to be contradictory! Why combine two reviled and contradictory concepts? We argue that if the terms are properly understood, both concepts show a lot of good sense—and they are far more attractive together than alone. The problem with the terms is that they have been captured by dogmatists.

The libertarian aspect of our strategies lies in the straightforward insistence that much of the time, and so long as they are not harming others, people should be free to do what they like—and to opt out of arrangements they deem undesirable if that is what they want to do. To borrow a phrase from the late Milton Friedman, libertarian paternalists urge that people should be "free to choose." We strive to design policies that maintain or increase freedom of choice. When we use the term *libertarian* to modify the word *paternalism*, we simply mean liberty-preserving. And when we say liberty-preserving, we really mean it. Libertarian paternalists want to make it easy for

people to go their own way; they do not want to burden those who want to exercise their freedom. (We emphasize that when people are inflicting harm on others, freedom of choice is not the best idea—but even in such cases, nudges can play an important role. We'll get to that. We also acknowledge that if people are making really terrible choices and harming their future selves, nudges might not be enough. We'll get to that, too.)

The paternalistic aspect lies in the claim that it is legitimate for choice architects to try to influence people's behavior in order to make their lives longer, healthier, and better. In other words, we argue for self-conscious efforts, by institutions in the private sector and by government, to steer people's choices in directions that will improve their lives. We are aware that many people, including many philosophers, have devoted a lot of effort to defining the term *paternalism*, and to exploring what might be right or wrong with it. The paternalistic policies that we favor aim to influence choices in a way that will make choosers better off, *as judged by the choosers themselves*. This is a paternalism of means, not of ends; those policies help people reach their own preferred destination.

We know from decades of behavioral science research that people often make poor decisions in laboratory experiments. People also make plenty of mistakes in real life, which reinforces the view well stated by the Beatles: "we get by with a little help from our friends." Our goal, in short, is to help people make the choices that they would have made if they had paid full attention and possessed complete information, unlimited cognitive ability, and complete self-control. (That doesn't mean people shouldn't sometimes stay out late, overeat, and have fun. As they say, "enjoy life now; this is not a rehearsal.")

Libertarian paternalism is a relatively weak, soft, and nonintrusive type of paternalism, because choices are not blocked, fenced off, or significantly burdened. If people want to smoke cigarettes, eat a lot of candy, choose an unsuitable health care plan, or fail to save for retirement, libertarian paternalists will not force them to do otherwise—or even make things hard for them. Still, the approach we recommend does count as paternalistic, because in important contexts, private and public choice architects should not merely track or implement people's anticipated choices. Rather, they should attempt to move people in directions that will make their lives better. They should nudge.

A *nudge*, as we will use the term, is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not taxes, fines, subsidies, bans, or mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not.

Many of the policies we recommend can be and have been implemented by the private sector (with or without a nudge from the government). Employers, for example, are important choice architects in many of the examples we discuss in this book. In areas involving health care and retirement plans, we think that employers can give employees far more helpful nudges (for example, through sensible default rules, clear presentation of information, and helpful hints). Private companies that want to make money and to do good can benefit by creating environmentally friendly nudges, helping to reduce air pollution and the emission of greenhouse gases. But, of course, companies can also use the concepts we discuss to increase sales in unsavory ways. They might impose sludge. We strive to reduce the sludge produced in both the public and private sectors. See Chapter 8.

Econs and Humans: Why Nudges Can Help

Those who reject paternalism often claim that human beings do a terrific job of making choices, or if not terrific, certainly better than anyone else would do (especially if that someone else works for the government). Whether or not they have ever studied economics, many people seem at least implicitly committed to the idea of *Homo economicus*, or economic man—the notion that each of us thinks and chooses unfailingly well, and thus fits within the usual depiction of human beings that is offered by economists.

If you look at economics textbooks, you will learn that *Homo economicus* can think like Albert Einstein, store as much memory as Google does in the cloud, and exercise the willpower of Mahatma Gandhi. Really. But the folks we know are not like that. Real people have trouble with long division if they don't have a calculator, sometimes forget their spouse's birthday, and have a hangover on New Year's Day. They are not *Homo economicus*; they are *Homo sapiens*. To keep our Latin usage to a minimum, we will hereafter refer to these imaginary and real species as Econs and Humans.

Consider the issue of obesity. Rates of adult obesity in the United States are over 40 percent,[1] and more than 70 percent of American adults are considered either obese or overweight.[2] Worldwide, there are some 1 billion overweight adults, 300 million of whom are obese. Rates of obesity range from below 6 percent in Japan, South Korea, and some African nations to more than 75 percent in American Samoa.[3] According to the World Health Organization, obesity rates have risen threefold since 1980 in some areas of North America, the United Kingdom, Eastern Europe, the Middle East, the Pacific Islands, Australia, and China. There is overwhelming evidence that obesity increases the risk of heart disease and diabetes, frequently leading to premature death. It would be quite fantastic to suggest that everyone is choosing their best possible diet, or a diet that is preferable to what might be produced with a few nudges.

Of course, sensible people care about the taste of food, not simply about health, and eating is a source of pleasure in and of itself. We do not claim that everyone who is overweight is necessarily failing to act rationally, but we do reject the proposition that all or almost all people are choosing their diet optimally. What is true for diets is true for other risk-related behavior, including smoking and drinking, which produce hundreds of thousands of premature deaths each year in the United States alone. With respect to diet, smoking, and drinking, people's current choices cannot always be said to be the best means of promoting their own well-being (to put it lightly). Indeed, many smokers, drinkers, and overeaters are willing to pay third parties to help them make better decisions.

These findings complement those of the emerging science of choice, consisting of an extensive body of research over the past half-century. Much of the initial research in this field was conducted with laboratory experiments, but a substantial and rapidly growing amount comes from studies of real-world behavior, including archival studies of choices made in natural settings and randomized controlled trials. This research has raised serious questions about the soundness and wisdom of many judgments and decisions that people make. To qualify as Econs, people are not required to make perfect forecasts (that would require omniscience), but they are required to make *unbiased* forecasts. That is, forecasts can be wrong, but they can't repeatedly err in a predictable direction. Unlike Econs, Humans make predictable mistakes. Take, for example, the planning fallacy—the systematic tendency toward unrealistic optimism about the time it takes to complete projects. It will come as no surprise to anyone who

lives. They worry that governments cannot be trusted to be competent or benign. They fear that elected officials and bureaucrats will be ignorant, will place their own interests first, or will pay excessive attention to the narrow goals of self-interested private groups. We share these concerns. In particular, we emphatically agree that for government, the risks of mistake, bias, and overreaching are real and sometimes serious. That is why we generally favor nudges over commands, requirements, and prohibitions (except when people are harming others). But governments, no less than cafeterias (which governments frequently run), have to provide starting points of one or another kind. This is not avoidable. As we shall emphasize, they do so every day through the policies they establish, in ways that inevitably affect some choices and outcomes. In this respect, the anti-nudge position is a logical impossibility—a literal nonstarter.

The second misconception is that paternalism always involves coercion. In the cafeteria example, the choice of the order in which to present food items does not force a particular diet on anyone, yet Carolyn, and others in her position, might select some arrangement of food on grounds that are paternalistic in the sense that we use the term. Would anyone object to putting the fruit and salad before the desserts at an elementary school cafeteria if the result were to induce kids to eat more apples and fewer brownies? Is this question fundamentally different if the customers are teenagers, or even adults? Is a GPS device an intrusion on freedom, even if it is paternalistic, in the sense that it tries to tell you how to get to your preferred destination? When no coercion is involved, we think that some types of paternalism should be acceptable even to those who most embrace freedom of choice.

In domains as varied as savings, health, consumer protection, organ donation, climate change, and insurance, we will offer specific suggestions in keeping with our general approach. And by insisting that choices remain unrestricted, we think that the risks of inept or even corrupt designs are reduced. Freedom to choose is the best safeguard against bad choice architecture.

Choice Architecture in Action

Choice architects can make major improvements to the lives of others by designing user-friendly environments. Many of the most successful companies have succeeded in the marketplace for exactly that reason. Sometimes the choice architecture is highly visible, and consumers and employees appreciate the value it provides. Apple's iPhone became an enormous economic success in part because of its elegant style, but mostly because users found it easy to get the device to do what they want. Sometimes the choice architecture is neglected and could benefit from some careful attention.

Consider an illustration from the American workplace. (If you live elsewhere, please take pity on our plight.) Most large employers offer a range of benefits, including such things as life and health insurance and retirement savings plans. Once a year in late fall, there is an open enrollment period when employees are allowed to revise the selections that they made the previous year. Employees are required to make their choices online. They typically receive, by mail, a package of materials explaining the choices they have and instructions on how to log on to make these choices. They also receive various reminders.

Because employees are human, some neglect to log on, so it is crucial to decide what the default options are for these busy, absentminded, and perhaps even overwhelmed employees. Usually, the default is one of two options: employees can be given the same

option they chose the previous year, or their choice can be set back to "zero." Call these the "status quo" and "back-to-zero" options. How should the choice architect choose between these defaults?

Libertarian paternalists would like to set the default by asking what thoughtful and well-informed employees would actually want. Although this principle may not always lead to a clear choice, it is certainly better than choosing the default at random, or making either status quo or back to zero the default for everything. For example, it is a good guess that most employees would not want to cancel their heavily subsidized health insurance. So, for health insurance the status quo default (same plan as last year) seems strongly preferable to the back-to-zero default (which would mean going without health insurance).

Compare this to an employee's flexible spending account, a peculiarly cruel "benefit" that we believe exists only in the United States. An employee can contribute money into this account each month that can then be used to pay for certain expenditures (such as uninsured medical or childcare expenses). The cruel feature is that money put into this account has to be spent by March 31 of the following year or it is lost, and the predicted expenditures might vary greatly from one year to the next (for example, medical expenses might go up in a year in which a family welcomes a newborn, or childcare expenses might go down when a child enters school). In this case, the back-to-zero default probably makes more sense than the status quo.

This problem is not hypothetical. Some time ago, Thaler had a meeting with three of the top administrative officers of his employer, the University of Chicago, to discuss similar issues, and the meeting happened to take place on the final day of the open enrollment period. He mentioned this coincidence and teasingly asked whether the administrators had remembered to log on and adjust their benefits package. One sheepishly said that he was planning on doing it later that day and was glad for the reminder. Another admitted to having forgotten, and the third said that he was hoping his wife had remembered to do it! The group then turned to the topic of the meeting, namely what the default should be for an option with the uninviting name "supplementary salary reduction program" (it's better than it sounds; it's actually a tax-sheltered savings program). At that time the default was the back-to-zero option, and Thaler had arranged the meeting hoping to convince the administrators to change the default to "same as last year." After their own absentminded behavior was made salient to them, the administrators quickly agreed to the change. We are confident that many university employees will have more comfortable retirements as a result.

This example illustrates some basic principles of good choice architecture. Choosers are human, so designers should make life as easy as possible. Send reminders (but not too many!) and then try to minimize the costs imposed on those who, despite your (and their) best efforts, space out. As we will see, these principles (and many more) can be applied in both the private and public sectors, and there is much room for going beyond what is now being done. Large companies and governments, please take note. (Also universities and small companies.)

A New Path

We shall have a great deal to say about nudges from private institutions. But many of the most important applications of libertarian paternalism are for governments, and we will offer a number of recommendations for public policy and law. Our hope when we originally wrote this book was that those recommendations might appeal to both

sides of the political divide. Indeed, we believed that the policies suggested by libertarian paternalism could be embraced by conservatives and liberals. We are pleased to report that, far more than we could have anticipated, that belief has been vindicated.

In the United Kingdom, former Prime Minister David Cameron, the leader of the Conservative Party, embraced nudging and created the world's first team devoted solely to this effort, officially called the Behavioural Insights Team, but often called the Nudge Unit.[fn4] In the United States, former President Barack Obama, a Democrat and a liberal, also embraced the basic idea, directed his agencies to adopt numerous nudges, and created a nudge unit of his own (originally known as the Social and Behavioral Sciences Team, and now called the Office of Evaluation Sciences). The United States Agency for International Development has an assortment of programs that use behavioral science and insights. In the years since the book was originally published, governments around the world, spanning the political landscape, have incorporated these and related ideas in an effort to make their programs more efficient and effective. There are behavioral insights teams or nudge units of various kinds in numerous nations, including Australia, New Zealand, Germany, Canada, Finland, Singapore, the Netherlands, France, Japan, India, Qatar, and Saudi Arabia. A great deal of relevant work is being done by the World Bank, the United Nations, and the European Commission. In 2020, the World Health Organization created a Behavioral Insights Initiative focusing on numerous public health issues, including pandemics, vaccination uptake, and risk-taking by young people.

Although the world seems to be becoming increasingly polarized, we continue to believe that libertarian paternalism can be a promising foundation for bipartisanship and for simple problem-solving. Better governance often requires less in the way of government coercion and more in the way of freedom to choose. Mandates and prohibitions have their place (and behavioral science can help to identify them), but when incentives and nudges replace requirements and bans, government will be both smaller and more modest. So, to be clear: this book is not a call for more bureaucracy, or even for an increased role of government. We just strive for better governance. In short, libertarian paternalism is neither left nor right. For all their differences, we hope that people with very different political convictions might be willing to converge in support of gentle nudges.

Part I

HUMANS AND ECONS

1

Biases and Blunders

Have a look, if you would, at the two tables shown in the figure below:

Figure 1.1. Two tables (Adapted from Shepard [1990])

Suppose that you are thinking about which one would work better as a coffee table in your living room. What would you say are the shapes of the two tables? Take a guess at the ratio of the length to the width of each. Just eyeball it.

If you are like most people, you think that the table on the left is much longer and narrower than the one on the right. Typical guesses are that the ratio of the length to the width is 3:1 for the left table and 1.5:1 for the right table. Now take out a ruler and measure each table. You will find that the shapes of the two tabletops are identical. Measure them until you are convinced, because this is a case where seeing is not believing. (When Thaler showed this example to Sunstein at their usual lunch haunt, Sunstein grabbed his chopstick to check.)

What should we conclude from this example? If you see the left table as longer and thinner than the right one, you are certifiably human. There is nothing wrong with you (well, at least not that we can detect from this test). Still, your judgment in this task was biased, and predictably so. No one thinks that the right table is narrower! Not only were you wrong; you were probably confident that you were right. If you like, you can put this visual to good use when you encounter others who are equally human and who are disposed to gamble away their money, say, at a bar.

Figure 1.2. Tabletops (Adapted from Shepard [1990])

Now consider Figure 1.2. Do these two shapes look the same or different? Again, if you are human and have decent vision, you probably see these shapes as being identical, as they are. But these two shapes are just the tabletops from Figure 1.1, removed from their legs and reoriented. Both the legs and the orientation facilitate the illusion that the tabletops are different in Figure 1.1, so removing these distracters restores the visual system to its usual, amazingly accurate state.[fn1] These two figures capture the key insight that behavioral economists have borrowed from psychologists. Normally the human mind works remarkably well. We can recognize people we have not seen in years, understand the complexities of our native language, and run down a flight of stairs without falling. Some of us can speak twelve languages, improve the fanciest computers, or create the theory of relativity. However, even Albert Einstein, Bill Gates, and Steve Jobs would probably be fooled by those tables. That does not mean

tip at all. Some people were evidently put off by the aggressive defaults, and they refused to give anything.[3] This is connected with the behavioral phenomenon of *reactance*: when people feel ordered around, they might get mad and do the opposite of what is being ordered (or even suggested).

Still, the evidence shows that, within reason, the more you ask for, the more you tend to get. Haggag's headline is that because of the higher on-screen default tips, taxi drivers ended up with a decent increase in their annual earnings. Lawyers who sue companies sometimes win astronomical amounts, in part because they have successfully induced juries to anchor on multimillion-dollar figures (such as a company's annual earnings). Clever negotiators often get amazing deals for their clients by producing an opening offer that makes their adversary thrilled to pay half that very high amount. But keep that notion of reactance in mind. If you get greedy, you might end up with nothing.

Availability

A quick quiz: In the United States, are more gun deaths caused by homicides or suicides?

In answering questions of this kind, most people use what is called the *availability heuristic*. They assess the likelihood of risks by asking how readily examples come to mind. Because homicides are much more heavily reported in the news media, they are more available than suicides, and so people tend to believe, wrongly, that guns cause more deaths from homicide than from suicide. (There are about twice as many gun-inflicted suicides as homicides.) An important lesson can be found here: people often buy a gun thinking they want to protect their family, but it is much more likely that they will increase the chance that a family member successfully commits suicide.

Accessibility and salience are closely related to availability, and they are important as well. If you have personally experienced a serious earthquake, you're more likely to believe that a flood or an earthquake is likely than if you read about it in a weekly magazine. Thus, vivid and easily imagined causes of death (for example, tornadoes) often receive inflated estimates of probability, and less-vivid causes (for example, asthma attacks) receive low estimates, even if they occur with a far greater frequency (here a factor of twenty). So, too, recent events have a greater impact on our behavior, and on our fears, than earlier ones.

The availability heuristic helps to explain much risk-related behavior, including both public and private decisions to take precautions. Whether people buy insurance for natural disasters is greatly affected by recent experiences.[4] In the aftermath of a flood, purchases of new flood insurance policies rise sharply—but purchases decline steadily from that point, as vivid memories recede. And people who know someone who has experienced a flood are more likely to buy flood insurance for themselves, regardless of the flood risk they actually face.[5]

Biased assessments of risk can perversely influence how we prepare for and respond to crises, business choices, and the political process. When technology stocks have done very well, people might well buy technology stocks, even if by that point they've become a bad investment. People might overestimate some risks, such as a nuclear power accident, because of well-publicized incidents such as Chernobyl and Fukushima. They might underestimate others, such as strokes, because they do not get much attention in the media. Such misperceptions can affect policy, because some governments will allocate their resources in a way that fits with people's fears rather than in response to the most likely dangers.

When availability bias is at work, both private and public decisions may be improved if judgments can be nudged back in the direction of true probabilities. A good way to get people to take more precautions about a potential hazard is to remind them of a related incident in which things went wrong; a good way to increase people's confidence is to remind them of a similar situation in which everything worked out for the best.

Representativeness

The third of the original three heuristics bears an unwieldy name: representativeness. Think of it as the similarity heuristic. The idea is that when asked to judge how likely it is that A belongs to category B, people answer by asking themselves how similar A is to their image or stereotype of B (that is, how "representative" A is of B). Like the other two heuristics we have discussed, this one is used because it often works. Stereotypes are sometimes right!

Again, biases can creep in when similarity and frequency diverge. The most famous demonstration of such biases involves the case of a hypothetical woman named Linda. In an experiment, subjects were told the following: "Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and also participated in antinuclear demonstrations." Then people were asked to rank, in order of the probability of their occurrence, eight possible futures for Linda. The two crucial answers were "bank teller" and "bank teller and active in the feminist movement." Most people said that Linda was less likely to be a bank teller than to be a bank teller and active in the feminist movement.[6]

This is an obvious logical mistake. It is, of course, not logically possible for any two events to be more likely than one of them alone. It just has to be the case that Linda is more likely to be a bank teller than a feminist bank teller, because all feminist bank tellers are bank tellers. The error stems from the use of the representativeness heuristic: Linda's description seems to match "bank teller and active in the feminist movement" far better than "bank teller." As Stephen Jay Gould once observed, "I know [the right answer], yet a little homunculus in my head continues to jump up and down, shouting at me 'but she can't just be a bank teller; read the description!'"[7] Like the availability heuristic, the representativeness heuristic often works well, but it can lead to major errors.

Optimism and Overconfidence

Before the start of Thaler's class in managerial decision making, students fill out an anonymous survey on the course website. One of the questions is "In which decile do you expect to fall in the distribution of grades in this class?" Students can check the top 10 percent, the second 10 percent, and so forth. Since these are MBA students, they are presumably well aware that in any distribution, half the population will be in the top 50 percent and half in the bottom. And only 10 percent of the class can, in fact, end up in the top decile.

Nevertheless, the results of this survey reveal a high degree of unrealistic optimism about performance in the class. Typically less than 5 percent of the class expects their performance to be below the median (the 50th percentile) and more than half the class expects to perform in one of the top two deciles. Invariably, the largest group of

students put themselves in the second decile. We think this is most likely explained by modesty. They really think they will end up in the top decile but are too modest to say so.

MBA students are not the only ones overconfident about their abilities. The "above-average" effect is pervasive. In some studies, 90 percent of drivers say they are above average behind the wheel. And nearly everyone thinks they have an above-average sense of humor, including some people who are rarely seen smiling. (That is because they know what is funny!) This applies to professors, too. One study found that about 94 percent of professors at a large university believed they were better than the average professor, and there is every reason to think that such overconfidence applies to professors in general.[8] (Yes, we admit to this particular failing.)

People are unrealistically optimistic even when the stakes are high. In the United States, about 40 to 50 percent of marriages end in divorce, and this is a statistic most people have heard. (The precise number is hard to nail down.) But around the time of the ceremony, almost all couples have been found to believe that there is approximately a zero percent chance that their marriage will end in divorce—even those who have already been divorced![9] (Second marriage, Samuel Johnson once quipped, "is the triumph of hope over experience.") A similar point applies to entrepreneurs starting new businesses, in which the failure rate is at least 50 percent. In one survey of people starting new businesses (typically small businesses, such as contracting firms, restaurants, or salons), respondents were asked two questions: (a) What do you think is the chance of success for a typical business like yours? (b) What is your chance of success? The most common answers to these questions were 50 percent and 90 percent, respectively, and many said 100 percent in response to the second question.[10]

Unrealistic optimism can explain a lot of individual risk-taking, especially in the domain of risks to life and health. Asked to envision their future, students typically say that they are far less likely than their classmates to be fired from a job, to have a heart attack or get cancer, to be divorced after a few years of marriage, or to have a drinking problem. Older people underestimate the likelihood that they will be in a car accident or suffer major diseases. Smokers are aware of the statistical risks and often even exaggerate them, but most believe that they are less likely to be diagnosed with lung cancer and heart disease than most nonsmokers. Lotteries are successful partly because of unrealistic optimism.[11]

Unrealistic optimism is a pervasive feature of human life; it characterizes most people in most social categories. When they overestimate their personal immunity to harm, people may fail to take sensible preventive steps. During the pandemic of 2020 and 2021, some people failed to take precautions, including mask-wearing, because of optimism about their personal risks. If people are running risks because of unrealistic optimism, they might be able to benefit from a nudge. In fact, we have already mentioned one possibility: if people are reminded of a bad event, they may not continue to be so optimistic.

Gains and Losses

People hate losses. In more technical language, people are "loss averse." Roughly speaking, the prospect of losing something makes you twice as miserable as the prospect of gaining the same thing makes you happy. How do we know this?

Consider a simple experiment.[12] Half the students in a class are given a coffee mug with the insignia of their home university embossed on it. The students who do not get a mug are asked to examine their neighbors' mugs. Then mug owners are invited to sell their mugs and nonowners are invited to buy them. They do so by answering this question: "At each of the following prices, indicate whether you would be willing to (give up your mug/buy a mug)." The results show that those with mugs demand roughly twice as much to give them up as others are willing to pay to get one. Thousands of mugs have been used in dozens of replications of this experiment, but the results are nearly always the same. Once you have a mug, you don't want to give it up. But if you don't have one, you don't feel an urgent need to buy one. What this means is that people do not assign specific values to objects; it often matters whether they are selling or buying.

It is also possible to measure loss aversion with gambles. Suppose I ask you whether you want to make a bet. Heads you win $X, tails you lose $100. How much does X have to be for you to take the bet? For many people, the answer to this question is somewhere around $200. This implies that the prospect of winning $200 just offsets the prospect of losing $100.

Loss aversion helps produce inertia, meaning a strong desire to stick with your current holdings. If you are reluctant to give up what you have because you do not want to incur losses, then you will turn down trades you might have otherwise made. In another experiment, half the students in a class received coffee mugs (of course) and half got large chocolate bars. The mugs and the chocolate cost about the same, and in pretests students were as likely to choose one as the other. Yet when offered the opportunity to switch from a mug to a candy bar or vice versa, only one in ten switched.

Loss aversion has a lot of relevance to public policy. If you want to discourage the use of plastic bags, should you give people a small amount of money for bringing their own reusable bag, or should you ask them to pay the same small amount for a plastic bag? The evidence suggests that the former approach has no effect at all, but that the latter works; it significantly decreases use of plastic bags. People don't want to lose money, even if the amount is trivial.[13] (Environmentalists, please remember this point.)

Status Quo Bias

For lots of reasons, people have a general tendency to stick with their current situation. One reason is loss aversion; giving up what we have is painful. But the phenomenon has multiple causes. William Samuelson and Richard Zeckhauser have dubbed this behavior *status quo bias*, and it has been demonstrated in numerous situations.[14] Most teachers know that students tend to sit in the same seats in class, even without a seating chart. But status quo bias can occur even when the stakes are much larger, and it can cost people a lot of money.

For example, in retirement savings plans most participants pick an asset allocation when they join the plan and then forget about it. A study conducted in the late 1980s looked at the decisions of participants in a pension plan that covered many college professors in the United States. The median number of changes in the asset allocation over a lifetime was, believe it or not, zero.[15] In other words, over the course of their careers, more than half of the participants made exactly no changes to the way their contributions were being allocated. Perhaps even more telling, many married

participants who were single when they joined the plan still had their mothers listed as their beneficiaries! As we will see, inertia in investing behavior is alive and well in Sweden. (See Chapter 10.)

Status quo bias is easily exploited. A true story: Many years ago, American Express wrote Sunstein a cheerful letter telling him that he could receive, for free, three-month subscriptions to five magazines of his choice.[fn2] What a great deal! Free subscriptions seem like a bargain, even if the magazines rarely got read, so Sunstein happily made his choices. What he didn't realize was that unless he took some action to cancel his subscription, he would automatically keep receiving the magazines after the three-month period, automatically paying for them at the normal rate. For more than a decade, he continued to subscribe to magazines that he hardly ever read and that he mostly despised. They tended to pile up around the house. He kept intending to cancel those subscriptions, but somehow never got around to it. It was not until he started working on the original edition of this book that he canceled them.

One of the causes of status quo bias is a lack of attention. Many people often adopt what we call the "yeah, whatever" heuristic. A good illustration is the carryover effect that occurs when people start binge-watching a television series. On most streaming networks if you do nothing when you reach the end of one episode, the next one just starts showing. At that point many viewers (implicitly) say, "yeah, whatever," and keep watching. Many an intended short evening has dragged long into the night as a result, especially on shows with cliffhanger endings. Nor is Sunstein the only victim of automatic renewal of magazine subscriptions, which has now been extended to virtually every online service. Those who are in charge of circulation know that when renewal is automatic, and particularly when people have to make a phone call to cancel, the likelihood of renewal is much higher than it is when people have to indicate that they actually want to continue to receive the magazine. (We will return to this point in Chapter 8 in connection with sludge.) The combination of loss aversion and mindless choosing is one reason why if an option is designated as the default, it will usually (but not always!) attract a large market share. Default options thus act as powerful nudges. For this and other reasons, setting the best possible defaults is a theme we explore often in this book.

Framing

Suppose that you are suffering from serious heart disease and your doctor proposes a grueling operation. You're understandably curious about the odds of surviving this ordeal. The doctor says, "Of one hundred patients who have this operation, ninety are alive after five years." What will you do? That statement might feel pretty comforting, making you confident about having the operation.

But suppose the doctor frames his answer in a somewhat different way. Suppose he says, "Of one hundred patients who have this operation, ten are dead after five years." If you're like most people, the doctor's statement will sound pretty alarming and you might not have the operation. Instinctively, you might think: "A significant number of people are dead, and I might be one of them!" In numerous experiments, people react very differently to the information that "ninety of one hundred are alive" than to "ten of one hundred are dead"—even though the content of the two statements is exactly the same. Even experts are subject to framing effects. When doctors are told that "ninety of one hundred are alive," they are more likely to recommend the operation than if told that "ten of one hundred are dead."[16]

bad first impression, or who tries to win votes through complex arguments and statistical demonstrations, may well run into trouble.)[fn3] [20]

Most people in the world have an Automatic System reaction to a temperature given in Celsius but have to use their Reflective System to process a temperature given in Fahrenheit; for Americans, the opposite is true. People speak their native languages using their Automatic Systems and tend to struggle to speak another language using their Reflective Systems. Being truly bilingual means that you speak two languages using the Automatic System. Accomplished chess players have pretty fancy intuitions; their Automatic Systems allow them to size up complex situations rapidly and respond with both amazing accuracy and exceptional speed.

One way to think about all this is that the Automatic System is your gut reaction and the Reflective System is your conscious thought. Gut feelings can be quite accurate, but we often make mistakes because we rely too much on our Automatic System. The Automatic System says, "The airplane is shaking, I'm going to die," while the Reflective System responds, "Plane crashes are extremely rare!" The Automatic System says, "That big dog is going to hurt me," and the Reflective System replies, "Most dogs are quite sweet." The Automatic System starts out with no idea how to kick a ball accurately or shoot a basketball into a faraway hoop. Note, however, that countless hours of practice enable accomplished athletes to avoid reflection and to rely on their Automatic Systems—so much so that good athletes know the hazards of thinking too much and might well do better to "trust the gut," or "just do it."

The Automatic System can be trained with lots of repetition—but such training takes a great deal of time and effort. One reason why teenagers are such risky drivers is that their Automatic Systems have not had much practice, and using the Reflective System is much slower. Sunstein is hopeful that Declan will develop a fully functional Reflective System before he is old enough to get a driver's license.

To see how intuitive thinking works, try the following little test. For each of the three questions, begin by writing down the first answer that comes to your mind. Then pause to reflect.

1. A bat and ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

2. You are one of three runners in a race. At the end, you overtake the runner who was in second place. In what place did you finish?

3. Mary's mother had four children. The youngest three are named: Spring, Summer, and Autumn. What is the eldest child's name?

What were your initial answers? Most people say 10 cents, first place, and Winter. But all these answers are wrong. If you think for a minute, you will see why. If the ball costs 10 cents and the bat costs one dollar more than the ball, meaning $1.10, then together they cost $1.20, not $1.10. No one who bothers to check whether his initial answer of 10 cents could possibly be right would give that as an answer, but research by Shane Frederick (who calls series of questions such as these the Cognitive Reflection Test) finds that these are the most popular answers even among bright college students.[21]

The correct answers are 5 cents, second place, and Mary, but you knew that, or at least your Reflective System did if you bothered to consult it. Econs never make an important decision without checking with their Reflective Systems (if they have time). But Humans sometimes go with the answer the lizard inside is giving without pausing

to think. If you are a television fan, think of Mr. Spock of *Star Trek* fame as someone whose Reflective System is always in control. (Captain Kirk: "You'd make a splendid computer, Mr. Spock." Mr. Spock: "That is very kind of you, Captain!") In contrast, Homer Simpson seems to have forgotten where he put his Reflective System. (Homer once replied to a gun store clerk who informed him of a mandatory five-day waiting period before buying a weapon, "Five days? But I'm mad now!")

One of our major goals in this book is to see how the world might be made easier, or safer, for the Homers among us (and the Homer lurking somewhere in each of us). If people can rely more on their Automatic Systems without getting into terrible trouble, their lives should be easier, better, and longer. Put another way, let's design policies for *Homer economicus*.

So What?

Our goal in this chapter has been to offer a brief glimpse at human fallibility. The picture that emerges is one of busy people trying to cope in a complex world in which they cannot afford to think deeply and at length about every choice they have to make. People adopt sensible rules of thumb that usually work well but sometimes lead them astray, especially in challenging or unfamiliar situations. Because they are busy and have limited attention, they tend to accept questions as posed rather than trying to determine whether their answers would vary under alternative formulations. The bottom line, from our point of view, is that people are, shall we say, nudge-able. Their choices, even in life's most important decisions, are influenced in ways that would not be anticipated in a standard economic framework. Here is one final example to illustrate.

One of the most scenic urban thoroughfares in the world is Chicago's Lake Shore Drive, which hugs the Lake Michigan coastline that is the city's eastern boundary. The drive offers stunning views of Chicago's magnificent skyline. There is one stretch of this road that puts drivers through a series of S curves. These curves are dangerous. For a long time, many drivers failed to take heed of the reduced speed limit (25 mph) and wiped out. In response, the city adopted a distinctive way of encouraging drivers to slow down.

At the beginning of the dangerous curve, drivers encounter a sign painted on the road warning of the lower speed limit, and then a series of white stripes painted onto the road. The stripes do not provide much if any tactile information (they are not speed bumps) but rather just send a visual signal to drivers. When the stripes first appear, they are evenly spaced, but as drivers reach the most dangerous portion of the curve, the stripes get closer together, giving the sensation that driving speed is increasing (see Figure 1.3). One's natural instinct is to slow down. When we drive on this familiar stretch of road, we find that those lines are speaking to us, gently urging us to touch the brake before the apex of the curve. We have been nudged.

3

Following the Herd

Econs (and some economists we know) are pretty unsociable creatures. They communicate with others only if they can gain something from the encounter, they care about their reputations (because a good reputation is valuable), and they will learn from others if actual information can be obtained, but Econs are not followers of fashion. Their hemlines do not go up and down except for practical reasons, they do not wear ties, and if they did they would not grow narrower and wider simply as a matter of style. (By the way, ties were originally used as napkins; they actually had a function.) Humans, on the other hand, are often influenced by other Humans, even when they shouldn't be.

Sometimes massive social changes, in markets and politics alike, start with a small and even serendipitous social nudge. A prominent person might state an opinion or engage in an action, which gives a kind of signal, a green light or a permission slip, to others, who do the same. Or the opinion or action might come from someone who is not so prominent, but who is committed and who manages to come to the public's attention, and who ends up turning a business or even a culture around. The issue might involve a product, a book, an idea, a political candidate, or a cause. And occasionally, a trickle becomes a flood, especially when social media is involved.

In this chapter, we try to understand how and why social influences work. An understanding of those influences is important to choice architects for two reasons. First, most people learn from others. This is usually good, of course. Learning from others is how individuals and societies develop. But many of our biggest misconceptions also come from others. The problem is that what we learn from such interactions may not actually be true. When social influences have caused people to have false or biased beliefs, then some nudging may help. A second reason this topic is important for our purposes is that one of the most effective ways to nudge (for good or evil) is via social influence.

In 2020, in the places where we were living during the spring and summer (Northern California and Boston), most people chose to wear masks in public places in response to the COVID-19 pandemic—but in other places in the United States, many people (including prominent political leaders) made a point of *not* wearing masks. Social influences both promoted and discouraged mask wearing. A point worth remembering: Telling people that *a new norm is emerging*—say, in the domain of sustainability—can create a self-fulfilling prophecy.[1] Many do not want to be on the wrong side of history, and if they learn that people are increasingly doing something, they might think that what seemed difficult or even impossible is achievable, maybe even inevitable.

Social influences come in two basic categories. The first involves information. If many people do something or think something, their actions and their thoughts convey information about what is best for you to do or think. If people are picking up after their dogs, buckling their seatbelts, driving under the speed limit, saving for

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