

The Individual in Psychology, Neuroscience, and Economics

As we start our exploration of the decline in respect for the individual, we'll begin with the way we think about how we think. Understanding how human beings make decisions has puzzled our greatest philosophers and scientists for thousands of years, and we still struggle with it today, despite advances in these fields. In particular, fascinating developments in psychology and neuroscience over the last several decades have shed light on some unexpected quirks in our decision-making processes which steer our choices away from what would seem rational or prudent. Many of these quirks help explain why some of us eat too much, exercise too little, or spend our money on things we want now instead of saving it for things we will need in the future.

The evidence pouring out from the laboratories of psychologists and neuroscientists on almost a daily basis can easily make us doubt our own decision-making abilities. And certainly, we all make some dumb choices from time to time (I doubt it's just me!). However, these scientific findings—especially as reported by a media environment that oversimplifies the nuance and detail of experimental science and amplifies the most sensational results—can lead to think we make bad choices all the time. Furthermore, it isn't just the way these results are presented: The way that experiments are designed, conducted, and interpreted by scientists themselves also contributes to an overly pessimistic view of our faculties of choice.

In this chapter, we'll look at how scientists think about choice and then consider a more elaborate, nuanced, and inclusive understanding of it. We'll talk about how researchers' preconceptions about choice affect the

way they interpret their experimental findings and how this filters down to our own perceptions of our decision-making as well as how others see it. Businesses and government have their own reasons to understand how we make decisions too, and these understandings affect how they behave toward us when trying to influence our decisions. Given the coercive nature of state power, such influence is more troubling when practiced by the government, even if this is well-intentioned. All of this culminates in the first step in the overall argument of this book: that respect for the individual is being eroded, a trend we need to acknowledge and understand, so we can begin to reverse it.

THE CHOICES WE MAKE, FOR BETTER OR FOR WORSE

We make many choices throughout a normal day. Some are so trivial and automatic that they don't deserve to be called choices at all. For example, when I put my shoes on, I usually put the left one on first. I don't make a conscious choice to start with my left shoe each and every time I put my shoes on—I just do. My "decision" to put my shoes on in the first place is not much of a choice either; before I go out, I put on shoes. If there is any true choice involved, it would be which shoes to wear (which, for me, is never much of a decision either).

These are routine choices to which we don't give much thought, if any. But many of our choices, even minor ones, *are* true choices: what to wear for the day, what to eat (or where to go) for lunch, or which project to work on today. Then, there are the more significant choices: which online match to message for a date, which book to read (after you're done with this one, of course), or which car to buy. Finally, we have the "big ones," decisions such as which person to commit to, which job to take, and where to live. These decisions can be so monumental in the context of a life that they influence each other: For example, an attractive new job may be in a different city or country than you (and our significant other) want to live.

How do we make all of these decisions? It is reasonable to assume that our choices are made with a goal in mind. Sometimes, our goal is clear. If you want a burger for lunch (a common goal of mine), you choose a place that sells burgers; you would hardly further this goal by going to a sushi restaurant. But let's say you not only want a burger, but also want to go to a place that is quiet, close to work, not too unhealthy, within a certain price range, and without that thick mustard that always gives you an upset stomach around three in the afternoon. That is a much more complicated

goal (or set of goals). If there is one place that fits all those criteria, then congratulations, your choice is made. If there is more than one, then you can introduce other criteria as well: For instance, maybe you just went to one of them last week, so you go to another one now (And please tell me where you live).

More likely, there is no one burger joint that meets all of these criteria. Then, you have to decide which aspects of a burger place, or which one of your goals regarding lunch, are more important to you. Is quiet more important than cost? Is health more important than proximity to work? If you are strapped for cash this week, cost may be the overriding factor, but if you just saw your cardiologist yesterday, you may have your health on your mind. And some days, for some reason, you just really want that thick mustard. (The mouth wants what it wants, even if the stomach disagrees.)

If deciding on a place for lunch can be this complicated—especially if we lay out all the various aspects of the decision—you can imagine how complex our decisions are when they are about which job to take, where to live, and who to commit to. When facing choices like these in the past, you may have drawn up lists of pros and cons, and maybe they went on for pages. There's a lot involved in these choices, and for good reason: they will have an immeasurable impact on your life going forward. Even if there is no right or wrong choice, and no one choice can be said to be better than another, each will result in a different path for your life in many important ways, and you are right to spend time trying to predict what these paths will look like.

However, in decisions as big as these, and even in smaller ones like picking somewhere to eat lunch, we often are not aware of all the factors that go into the decision, much less what factors are more important at the time than others. We go with our gut, so to speak, and make the choice that has the most appeal, the one that we are happy with. (It may not even be the best decision you could have made; if you take the time necessary to choose *the* perfect place for lunch, you might not get there before dinner.) We're usually confident that we did have reasons to make the choice we did, and if we thought long enough we could probably articulate a fair number of them. But at a certain level, our choice is intuitive; we make the decision that furthers our goals—or, more generally, our *interests*—whether conscious or not.

Of course, not all of these decisions will be good ones. We have all made boneheaded choices from time to time, some of them more significant than others. Choosing the burger joint with the heavy mustard is a small mistake, but marrying the wrong person is not. But let's not be too hard on

ourselves. Some decisions do not turn out the way we wanted them to, but this does not mean our decision-making process is at fault. If you choose a certain route to drive to work, and then traffic comes to a sudden stop because of an eight-car pile-up a mile up the road, you'll wish you would chosen another route. But there was no way to know that accident would happen, so you can't blame your decision-making process; you made the best choice with the information you had at the time.

The cases in which we can legitimately say we made a bad decision are those in which we made them the wrong *way*. We can often pick out some step in our decision-making process in that particular case that went askew and led to a bad outcome. Maybe we weren't careful enough, such as when we neglect to check the traffic report before choosing a route to get to work, or when we buy a new TV without reading any reviews first. Maybe we were unduly swayed by clever advertising to order those new honey-glazed ribs even though eating honey-glazed ribs makes the heavy mustard seem like apple juice. And maybe we drunk-texted that ex at four in the morning because... well, because we were drunk. (Oops.) In all of these cases, not only was the outcome unfortunate (if not painful), but the bad outcomes resulted from faulty decision-making: We "should have known better."

The examples I gave above are fairly trivial, but bad decisions can have much more serious effects that are definitely no joke. Even minor choices, each of which has little impact in the here and now, can lead to significantly negative outcomes over time. Everyone who has struggled with addiction to alcohol, cigarettes, or food knows this all too well; they fight the temptation to have "just one drink," or a cigarette or cookie, every day. In the same way, financial decisions made against the background of insufficient information or emotional turmoil may have a negative impact on your income or wealth for years to come. And yes, even drunk-texting your ex could have catastrophic consequences, especially if you do it while you are in a relationship with someone else. (Big oops.)

ENTER THE PSYCHOLOGISTS AND NEUROSCIENTISTS

We're not the only people concerned about our bad decisions. Scholars, writers, poets, and songwriters have been musing for thousands of years about how and why we make the choices we make. Among the scholars who study choice are psychologists, economists, and neuroscientists, who in the last half-century or so have been tremendously productive in finding specific instances and circumstances in which our choices are particularly likely to go wrong.

In the 1950s, Herbert Simon, a polymath who worked in many fields related to decision science such as psychology, computer science, and management studies, criticized the unrealistic models of human decision-making normally used in economics (a field in which he won the Nobel Prize in 1978). Economists have a very simplistic model of choice, embodied in the hypothetical decision-maker *homo economicus*, which they argue is the source of its wide applicability and predictive power. In this model, individuals faced with a choice are assumed to have all the necessary information, which they can process perfectly in terms of all of their wants and needs to arrive at *the* one option that gives them the most satisfaction they can achieve (given their available resources such as money and time). In essence, each individual is assumed to be a computer or, as the economist Thorstein Veblen captured it more elegantly, a “lightning calculator of pleasures and pains who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact.”¹

Simon suggested that rather than having “perfect rationality” as economic models usually assumed, human beings instead have *bounded rationality*.² In this model of decision-making, people take the best information they can get, and think about it as well as they can, to make the best choice they can make in the time they have. There are limitations on how well each stage of this process can be performed that mirror the real-life imperfections of human beings. And even though the resulting choice may not be the “perfect” choice that individuals would have made if they had complete information, a perfect ability to process it, and all the time in the world, it is *good enough*. In fact, even though we like to think of ourselves as trying to make the best decisions we can at every point in our lives, more often we are satisfied with decisions that are good enough. As opposed to the ideal of maximizing or optimizing with regard to decision-making, Simon called this *satisficing*: making a decision that is good enough (or satisfactory) given all the many constraints involved.³

Simon’s work was a precursor to modern research in neuroscience that emphasizes the brain’s natural limits on processing capacity.⁴ At the risk of understatement, our brains are incredible, capable of amazing feats of intelligence, creativity, and kindness. But at the same time, they are biological organs evolved to promote survival and enable reproduction; they were not “designed” to excel at abstract thought and precise calculation. The fact that we can do these things at all is a testament to the adaptability of the human brain. But our brains did not evolve for this reason, and we

should not be disappointed to learn that they do not follow the precise mathematical logic of “perfect rationality” in decision-making, nor do they always arrive at the same solutions to problems that perfect rational processes would suggest.

More recently, psychologists working in the area of decision-making have discovered more specific ways in which our rationality falls short of perfection, many of them predictable based on the particular circumstances or context of a choice situation. The most influential research in this area was conducted and published by Daniel Kahneman and Amos Tversky beginning in the 1970s.⁵ Kahneman won the Nobel Prize in economics in 2002 for this work; Tversky, sadly, had passed before the award was given (but his contribution to their joint work was recognized in the prize announcement). Over the course of hundreds of experiments over several decades, Kahneman, Tversky, and many of their colleagues investigated specific “shortcuts” our brains take to save on the limited cognitive resources described above. Many of them evolved to enhance survival in more primitive times when quick decisions made the difference between life and death, and concerns about optimal choices for the long run did not seem as urgent.

Some of the more widely known biases, heuristics, and dysfunctions found by Kahneman and Tversky include:

Present bias: This describes our tendency to emphasize short-term benefits and costs to the exclusion of long-term ones. Present bias made a lot of sense when being closely attuned to the present was necessary to survive into the future, a situation most of us in the developed world do not often experience. Some preference for the present over the future is reasonable, because we don’t know as much about ourselves or the state of the world the farther into the future we try to imagine and plan for. But if we assume we will probably exist in some form ten years from now, it would be prudent to take our future self’s interests into account when making decisions now, such as those concerning diet, exercise, and finances. But present bias works again this, leading us to ignore our future selves completely, live entirely for the present, and have that extra donut, skip that physical, or spend all of that holiday bonus now.

Confirmation bias: This describes our tendency to pay more attention to, and give more weight to, new information that confirms what we already believe, and dismiss new information to the contrary. If you think bacon is the key to eternal life, you’ll always remember that one article in *Car and Driver* that promoted mass bacon consumption, while forgetting every study in the *New England Journal of Medicine* that cautions against it. This bias re-enters the public consciousness every election season—or, as we call it these days, “all the

time”—because of our tendency to watch news channels and read newspapers or websites that correspond to our political beliefs, which serves to reinforce and strengthen those beliefs instead of challenging them and exposing us to other points of view.⁶ Researchers think confirmation bias may have evolved to allow people to win arguments more often by enabling them to marshal supporting evidence quickly, but this comes at the expense of gathering more accurate information to make the best decisions for oneself.⁷

Availability heuristic: A close relative of confirmation bias and a cornerstone of bounded rationality, the availability heuristic describes our tendency to be satisfied with new information that is easy to obtain even if it might not be the most accurate or complete. Again, when our ancestors had to assess a dangerous situation with a predator very quickly, it made sense to rely on the information at hand because there was no time to get more. We may have much more time to make decisions these days, but we also have far more information at our fingertips, much more than we can possibly process in a reasonable amount of time. As a result, we often simply take the first bit of news we can get, whether through Facebook, Twitter, or our preferred news site or channel, regardless of whether that is the most accurate or truthful news out there.⁸

There are many more examples, but you get the idea.⁹ All of these cognitive quirks are departures from our idealized preconceptions of how we should make decisions; while they may have been prudent and even life-preserving many thousands of years ago, these biases and heuristics now pose problems when they interfere with what should be more considered decisions in our long-term interests.

A more familiar example may be our evolved taste for fatty foods. When we were not sure when we would have a chance to eat again, they were calorie-rich sources for energy, but now they're a problem, especially in the developed world where food can be summoned with a swipe on our phones. Even our taste for sugar, now widely considered a greater threat to health than fat is, had a negligible effect when it was relatively rare; now that high-fructose corn syrup is in everything, our tastes are biting back against us.¹⁰ We can resist our cravings for fatty and sugary foods (ha!) and even train ourselves to ignore them (ha ha!), but they are always there. In the same way, our cognitive biases, heuristics, and dysfunctions are, to a large extent, hardwired in our brains by thousands of years of evolution and have an undeniable effect on our decision-making processes.

In his 2011 book *Thinking, Fast and Slow*, Kahneman popularized many of his findings with Tversky and also introduced broader audiences to

the ideas of System 1 and System 2 thinking.¹¹ *System 1* is the more reactionary, quick decision-making (that we often regret), while *System 2* is the more deliberate, measured type of thought that we usually think of as “rational.” (Neuroscientists study the same dual levels of thinking in terms of *automatic* versus *controlled* processes, corresponding to Systems 1 and 2, respectively.) Most of the cognitive biases surveyed earlier operate by way of our System 1 thinking, our rapid responses to urgent choices. If we acknowledge these quirks, we can consciously try to overcome them by using our System 2 thinking, but at times when we have to make quick decisions (even if not life-and-death ones), it’s hard for our System 1 thinking not to fall into these traps. In such situations, we might rely on easily available information, especially when it corresponds with our beliefs, and make a decision based on the now rather than the later, even though we know better.¹² It’s just part of what we are as human beings who just recently arrived in the modern world after hundreds of thousands of years in the wilderness.

THE ECONOMISTS AND LAWYERS JOIN IN

All of these developments coming from psychology and neuroscience are tremendously informative and reveal valuable insights about the inner workings of our brains. They also emphasize, as I tried to do above, that our brains are not perfect computing machines but rather biological mechanisms that evolved to solve problems related to survival and reproduction. Unfortunately, many who interpret and use these findings do so, not in the context of the natural development of the brain and we evolved to think, but in the context of their own ideas about how we *should* think: specifically, preconceived notions about perfect rationality. Even we ourselves tend to think we should be logical and rational in all of our choices, and so we take these scientific findings as challenges or criticisms of our decision-making processes rather than descriptions and may conclude that we’re not as good at making choices as we “should” be.

Perhaps, the best example of this comes from economics, in terms of both theory and policy. The work of Kahneman and Tversky has spread beyond psychology to other fields, none with more impact than economics, where it helped launch the field of *behavioral economics*.¹³ If these new findings were going to shake up any field, economics was the obvious one because of its adherence to a model of perfectly rational decision-making. And economists deserve credit for accepting, accommodating, and adapting

to the new discoveries about how the brain works—not all economists, mind you, but enough of them to generate talk of whether behavioral economics is on its way to becoming, simply, economics.¹⁴

But many behavioral economists have taken an odd approach to appreciating the insights of the psychological work. Rather than taking this work as a challenge to the model of perfect rationality, which it shows to be a flawed and overly simplistic representation of our real-life decision-making, they take the position that human beings can be and *would be* perfectly rational if not for our evolved cognitive quirks, which are obstacles to reaching our full cognitive potential. In other words, for many behavioral economists, perfect rationality is the benchmark, and all the findings of experimental psychology are ways in which we fail to reach it. In discussing the assumptions (or *axioms*) of rational choice models, economists Glen Whitman and Mario Rizzo write that while “behavioral economics challenges the positive validity of those [rationality] axioms in describing human behavior,” it “maintains those axioms as normative standards to which agents ought to conform.”¹⁵ To some behavioral economists, the mainstream economic models are not wrong—it is our brains that are wrong because they do not fit the models. As psychologist Gerd Gigerenzer writes, behavioral economists “rather uncritically accept the rules of [the standard model] as the norm for all rational behavior, and blame mortals for not living up to this ideal.”¹⁶

Consistent with this emphasis on perfect rationality, legal scholars—especially those already using the tools of economics to analyze choices, rules, and outcomes in legal settings—began working with economists, psychologists, and neuroscientists, embracing behavioral economics and steering it in a more proactive direction.¹⁷ Not only did they continue investigating the implications of Kahneman and Tversky’s work for models of perfect rationality (especially in legal situations), but they also recommended new policies and laws that would help individuals in the real world counteract their cognitive biases and dysfunctions and make better decisions—that is, decisions closer to the decisions they would make if they were perfectly rational.

This movement reached its zenith with the publication of the book *Nudge* in 2008.¹⁸ Written by behavioral economist Richard Thaler and legal scholar Cass Sunstein based on previous academic work, *Nudge* promised a new policy tool that would improve individuals’ choices without controlling, blocking, or coercively affecting them. True to their title, they proposed the use of “nudges,” small changes to a choice

situation (or *choice architecture*) that would leverage individuals' cognitive biases and dysfunctions to help them make better choices in their own interests.

Thaler and Sunstein provide many examples of nudges in their book and subsequent work; I'll just mention two of the most prominent. The first deals with a choice many people make when they get a new job: whether to enroll in a retirement program such as a 401(k), which not only accrues interest tax-free but is often matched to a certain degree by the employer. Usually, the default choice is not to enroll, implying that new employees have to make an active choice to enroll. Thaler and Sunstein judge that too few new employees enroll, given the financial advantages, and therefore propose making enrollment the default choice, with the option to decline.¹⁹ Like many other changes in default options suggested by Thaler and Sunstein, this nudge takes advantage of *status quo bias*—our tendency to accept the current state of affairs rather than to consider the consequences of an alternative choice—in order to increase retirement savings. Because we are likely to accept defaults without much rational consideration, Thaler and Sunstein argue that making enrollment the default will increase people's retirement savings while not blocking them from declining to enroll if they want.

The second example involves arranging the food items in a cafeteria to encourage healthier food choices among customers. Because our choices are influenced by how they're presented, Thaler and Sunstein propose that cafeteria managers arrange choices so that healthier options are easier to reach and displayed more prominently and attractively, thereby encouraging customers subtly to select them.²⁰ Specifically, this nudge leverages *framing effects*—the outsized influence that the presentation of options has on the eventual choices we make among them—to encourage better eating and health in general. By simply making the salads easier to reach and more brightly lit than the pudding, customers are more likely to choose the former, promoting their general health while not preventing them from indulging their sweet tooth.

An important aspect of a nudge is that it does not foreclose any choices: New employers are free to opt out of retirement programs and customers can still choose the fried chicken and carrot cake instead of the salad and fruit cup. Due to our hardwired inclination to accept defaults and choose more attractive options, however, these nudges make us more likely to choose options that policymakers believe are better for us (or the ones we would presumably choose in the absence of cognitive quirks that lead us

astray). For this reason, Thaler and Sunstein call the nudge program “libertarian paternalism,” a new, subtler type of paternalism that steers individuals’ choices in directions judged to be in their interests while not blocking any choices altogether or significantly increasing their costs (such as by taxing them).²¹ This idea has become very popular around the world, with the USA, the UK, and other countries establishing departments or initiatives to explore the use of nudging in policymaking.²²

PROBLEMS IN THE LAND OF NUDGE

However well-intentioned, the concept of nudges involves serious problems that we can trace ultimately to the way economists and policymakers interpret the more basic psychological research that grounds it. To be more precise, there are two missing links in the chain from saying “some decisions are less than optimal” to “the government must act to improve individuals’ decisions.” Each of these missing links is problematic from either a logical or an ethical view, and both of them illustrate the decline in respect for the individual that is the larger point of this book.²³

The first missing link is the generalization from “*some* of individuals’ decisions in certain contexts are mistaken” to “*most or all* of individuals’ decisions in certain contexts are mistaken.” As we have seen, psychologists have shown that decisions are more likely to be compromised in certain contexts and situations. For example, “hot” choice situations that are emotionally intense or rushed, such as feeling forced to make a major purchase “while this once-in-a-lifetime offer lasts,” are more likely to engage an individual’s quick System 1 response without sufficient time for lengthy System 2 deliberation. This also applies to choice situations in which emotions are triggered more than facts or considered opinions, such as surprise marriage proposals (especially in public and *especially* on the Jumbotron at the playoffs). Also, decisions involving insufficient or unreliable information, or considerations of risk, also tend to make the best decisions less likely: Many financial decisions regarding borrowing or large purchases fit this characterization for many of us.²⁴

The keywords here, however, are “more likely” and “less likely.” Even if dumb choices are more common in some situations than others, not *every* decision made in less-than-perfect circumstances will be mistaken. When we make that improper jump in logic, however, we not only seem to justify more intervention in individuals’ choices, but also cast doubt on their basic powers of decision-making in general.

What explains this logical jump? The answer combines two aspects of nudging: the preconceptions about choice held by economists and policymakers, and the limits on what aspects of behavior they can observe.

Above, we discussed the two ways we can think of our own choices as bad: judging the process and judging the outcome. Scholars and policymakers do the same thing: Either they decide that an individual's decision-making process is compromised by some cognitive dysfunction or quirk, or they judge the decision the individual actually makes to be bad or wrong.

If they decide that an individual's choice process is flawed, policymakers can design a policy to improve that process by counteracting the flaw. Common policies of this type include offering information to help people make better choices (either in System 2 thinking or to prompt that type of thinking), or enforcing "cooling-off periods," mandatory delays in implementing decisions, so people have some time to change their minds once they have had a chance to think about it. Because these nudges do not steer people toward a particular decision, but instead improve individuals' decision-making processes themselves, they will have little effect on those who would have made sound choices anyway. In sense, they exemplify the spirit of what Colin Camerer and his colleagues call *asymmetric paternalism*, which

creates large benefits for those who make errors, while imposing little or no harm on those who are fully rational. Such regulations are relatively harmless to those who reliably make decisions in their best interest, while at the same time advantageous to those making suboptimal choices.²⁵

Because of this, these more passive nudges are mostly unproblematic; even if scholars and policymakers are overly pessimistic or judgmental regarding individuals' decision-making processes, such nudges do not interfere with those decisions and may even help people with generally sound choice processes make better decisions on occasion.

More importantly, this type of nudge is not predicated on the judgment of the final choices individuals actually make. Unfortunately, the second basis for judging choices does exactly this, wherein policymakers observe individuals' decisions and decide that these decisions are not in their best interests. This reveals a much more serious problem regarding the concept of nudges and reflects how individuals' choices and interests are understood by scholars and policymakers alike.

Consider choices like the following: eating sugary foods, smoking cigarettes, living a sedentary lifestyle, not participating in a retirement program, neglecting one's studies, and ignoring current news events. We can think of any number of cognitive biases and dysfunctions to explain these, but this is not the reason we might suspect they're bad choices. If we question these choices, it is more likely because we suspect they're bad for the people making them: They will result in poor health, financial situation, educational outcomes, or civic participation.

This is a reasonable suspicion, but we must also acknowledge that it's only a guess based on *our ideas* of what is best of the people making these choices. We may see an overweight man eating a banana split and think that was a bad decision, but we can't *know* it was a bad decision—that is for him alone to say because he alone knows why he made it. We may hear that the new assistant in our office declined to enroll in the firm's retirement program and think that was wrong, but we can't *know* it was wrong—she may have had valid reasons to put off enrollment.

In other words, we don't know why other people make the choices they make, because we don't know the *interests* in which they make them. The man eating the banana split may be rewarding himself for a year of sustained weight loss, or for a promotion he worked very hard to get, or simply because he really wanted one, in full knowledge of the adverse effects on his health. The new employee who declined the retirement program may be saving money for a down payment on a house, sending money to her parents to help with their medical bills, or planning a huge blowout in Vegas with her friends. We may not agree with these reasons, but they're not for us to judge, not if we want to respect individuals and their own goals and interests.

Policymakers are in the same situation when they observe and judge other people's choices: They have no knowledge of the interests in which these decisions are made and, therefore, no way to know whether these decisions advance those interests. Instead, they use their own idea of what individuals' interests are—or what they feel individuals' interests *should* be—and judge their choices against it. You and I may do the same thing casually, of course, but we do not have the power to implement policy to change decisions we judge to be wrong (if we wanted to). And it isn't just the more active nudges that are based on this presumption: The passive nudges such as education and cooling-off periods are also based on a judgment of poor choices in the hope that decision-makers will make a better choice under better conditions (even if no alternative choice is actively nudged in its place).

Nudge advocates claim that these concerns are not important because nudges are avoidable. Because nudges do not foreclose any other choices that people might want to make, they argue, people are not forced or coerced into the option “encouraged” by the nudge. But this argument denies the very reason nudges are so effective: They leverage the same unconscious cognitive quirks that lead to bad decisions. In the example of retirement programs, nudge advocates claim that people are too susceptible to the default of nonenrollment, so they change the default to enrollment. They take advantage of the same status quo bias that steered people toward the old default to steer them toward the new one that they chose. But this bias is no less powerful once the default is changed: If people found it hard to resist the default before it was changed, they will find it hard to resist it afterward. The same logic applies to the cafeteria example: They cannot claim customers were less likely to choose the salad when it was hard to reach and then argue that they are “free” to choose the banana split when it’s just as well hidden. Supporters of nudge cannot claim that people are inevitably swayed by choice architecture in the absence of nudges but have the perfectly rational capability to overcome the same thing in their presence.

CHOICE IS ABOUT INTERESTS, MESSY AS THEY ARE

This is where the overly simplistic conception of choice comes in. Advocates of nudges—as well as supporters of more coercive forms of paternalism who are motivated by similar behavioral concerns—base their recommendations on the presumption that individuals have very simple and general interests, such as health and wealth. They use these presumed, simple interests as the basis for judging people’s choices as well as for implementing policies to make these choices better (in terms of the presumed interests).

Paternalists defend these presumed interests as being general enough to apply to everybody, and certainly, most people have some concern for their bodily and financial well-being. But the fact that these interests are so general is also a drawback because individuals have specific and varied health-related and financial goals. With respect to health, some people want to lose weight, while others want to gain muscle; some are trying to cut back on sugar, while others trim back on meat; some are managing diseases or conditions, while others are trying to get pregnant (or avoid it). In the area of personal finance, some people are trying to maximize savings for retirement, while others are trying to buy houses, support family or charities, or

simply enjoy life in the here and now. General presumed interests in health or wealth cannot capture these nuanced goals of individuals, especially when they push people's choices in one specific direction within them, such as promoting retirement savings over other equally valid goals.²⁶

This reliance on a single general interest can be traced to how economists think about choice. In the standard economic model of choice, *homo economicus* decides how to use his scarce resources (money and time) to satisfy as many of his preferences or desires as possible. In the usual classroom example, Stan has \$100 to spend on various goods that have different prices, and he has to decide how to allocate his money between the two goods, depending on how much he likes various amounts of one versus the other, to get the most bang for his buck (or, in this case, a hundred of them). This model, often called *constrained preference satisfaction*, can be elaborated upon to include incomplete information and uncertainty, but generally, it assumes that people try to get as much as satisfaction as they can with the resources available to them. This notion of satisfaction, often worded in terms of "utility," is purposefully vague in order to accommodate each individual's unique preferences and goals.

So far, so good. But in practice, and especially when it comes to policymaking, this all-encompassing idea of utility is replaced by the focus of the particular policy effort, such as health, wealth, or whatever narrower measure of well-being the government is hoping to promote. To some extent, this is natural: If you are working in the Consumer Finance Protection Bureau, you are going to be concerned primarily with making sure consumers get the most from their saving and borrowing, but if you are working for the Federal Drug Administration, you will be more concerned with health outcomes and mortality rates. This does not change the fact, however, that policy decisions meant to steer individuals' decisions for one narrow reason may have an adverse effect on other aspects of their lives not accounted for by that particular agency: Health nudges do not normally account for effects on personal finances, and vice versa.

This is a problem because individuals do not make decisions in pursuit of very simple goals such as health and wealth (or even their personalized, narrower versions of them). Instead, they make decisions based on the entire breadth of their interests, which are multifaceted, complex, and subjective.²⁷ This concept of interests goes beyond even economists' open definition of utility, which respects the different preferences individuals may have and even acknowledges that their preferences may be altruistic in nature. Most of us want to see our loved ones be happy and successful in

what they choose to do; we may want the same for other people in our community, country, or the entire world. In other words, we care most obviously about our own preferences, happiness, or well-being, but also the preferences, happiness, and well-being of others. To their credit, some economists incorporate such altruistic motivations into their models, but the general assumption remains that individuals maximize their own well-being, and when evidence arises that they do not, it is treated as “exceptional” behavior because it is not predicted by the standard model.²⁸

However, interests are *multifaceted* in that they go beyond regard for utility or well-being, even that of other people, to encompass principles and ideals. For example, most people value their honesty or integrity, which leads them to forego certain acts, such as lying or cheating, to satisfy their preferences. An economist may say that people simply have a “preference” for honesty—or, more cynically, a preference to be *seen* as honest—but principles don’t influence our choices in the same way that preferences do. Rather than balancing a preference for honesty with a preference for the gain one could get from being dishonest, people are more likely to consider their honesty as ruling out dishonest action together, regardless of what they could achieve from it. More generally, principles are qualitative concepts of right and wrong that are difficult to weigh or balance against quantitative concepts of good and bad or better and worse. Instead, they are often considered to be different stages of decision-making, in which a person first considers whether an action is ethical or permissible before determining if it will benefit herself (or others she cares about).

In the same way, we also make choices to promote broader societal ideals, regardless of how these pursuits affect our preferences or well-being. We see this in people who devote their lives, figuratively and sometimes literally, to fighting for equal rights, environmental protection, or the humane treatment of refugees. Devotion to a cause greater than yourself is widely cited as a component of a deeper sense of happiness or well-being, but few people who exemplify this would cite this “reward” as their motivation; rather, they want to help make the world a better place, which, like adherence to personal principles, is very difficult to account for in the standard economic model of decision-making.

If this weren’t enough, interests are also *complex* because all the different aspects of our interests are combined in different ways in different situations. Remember our example of trying to choose where to eat lunch, which was based on various preferences. But suppose you’re concerned about the various restaurants’ records on environmental, labor, and gender

issues, and the question becomes even more complicated. Sometimes, these social factors may be foremost on our minds, and other times, we may just be craving an incredible burger. Or maybe one restaurant is great on labor issues but poor on recycling, and another has the reverse record—how to choose? This highlights the difference between preferences, which are easier to convert into comparable numbers and “optimized” (as economists are experts at doing), and principles, which are qualitative and therefore not easily compared to preferences. Many times, principled considerations override preferences altogether: For example, some people would never compromise their support of LGBTQ issues for a great burger at a restaurant whose owners have the opposite public stance, no matter how much they were craving one, while others who regard themselves as LGBTQ supporters might be willing to make such a compromise, perhaps because the restaurant has a terrific environmental record (or just a really good burger).

The multifaceted and complex nature of each individual’s interests makes them very difficult to use as a basis for policy, even if everyone had the same interests. Preferences, principles, and ideals combine in complicated and fluid ways that resist modeling or prediction. But it’s the *subjective* aspect of interests that poses the largest problem for policy because it makes them impossible for anyone to know. Only individuals themselves can possibly know the various reasons they make certain decisions, not to mention how those reasons are compared to each other and weighted or ranked to result in a final decision. Our friends from earlier who ate the banana split and put off retirement savings could have done so for any number of reasons, just a few of which we listed without even scratching the surface. In fact, we ourselves are usually not conscious of all the different aspects of our interests in which we make any decision; as we said before, much of it is done intuitively with interests operating under the radar of consciousness (or in our “gut”).²⁹ But we usually have at least a vague idea why we made a particular decision, which is exactly one vague idea more than an outside observer such as a scholar or policymaker has.

When scholars or policymakers presume interests on behalf of individuals and judge their decisions based on these imposed goals, they are denying the multifaceted and complex interests in which individuals make choices. However well-intentioned these external observers are—and I trust that most of them are, having met quite a few of them—they are nonetheless usurping the freedom of individuals to make decisions in their own interests. They are co-opting their decision-making powers through

the use of subtle nudges that leverage the very cognitive biases and dysfunctions that motivated nudges in the first place. Advocates of nudge claim to be helping individuals make the decisions they would make if they were more rational, but there is no way to know what decisions individuals would have made “if only”—instead, they are steered into making the decisions the policymakers think they should make, based on their idea of what is good for individuals.³⁰

WHAT HAPPENS WHEN WE NEGLECT INTERESTS

Much has been written, by myself and others, about the implications of nudge for individuals’ autonomy.³¹ This is an important concern: To the extent that nudges steer choices away from those individuals would have made in their own interests and toward ones that policymakers think they should make, individuals have less control over the choices they make and, more generally, the paths they want to follow in their lives. Many of the choices that nudges affect are small ones, but a sequence of choices that seem minor and inconsequential when taken individually add up to a life. Nudges force “course corrections” in individuals’ lives, and we can imagine that if enough decisions were affected by them, significant parts of a life could be controlled as much by anonymous policymakers as by individuals themselves.³²

I want to generalize from this point here, broadening the perspective away from the manipulative effect of nudges in particular to focus on the general mind-set at its foundation. To do this, we will return to the work of psychologists and neuroscientists that ground the nudge approach and look at the picture they paint of individuals and their decision-making that ignores the complex, multifaceted, and subjective nature of interests and, as a result, questions our *cognitive competency* and erodes the status of individuals in society.

To start, behavioral economists (and economists in general) are not alone in neglecting to appreciate the multifaceted and complex nature of interests. Any approach to looking at decision-making in a scientific way, which relies primarily on observation for data and then draws inferences from it, has the same problem. Psychologists present subjects in a laboratory—or, when they are lucky, in a naturally occurring situation—with different stimuli, observe their behavioral responses, and then try explain the causal connection in the most straightforward way possible, but always within some framework of how they think of choice to begin with.

Neuroscientists do much the same thing but with a focus on the brain itself, such as when they track which areas of the brain light up in an fMRI machine under different conditions or stimuli and then draw inferences based on the functions of the affected areas—again, based on their pre-conceptions of how choice works.³³ Even the most heavily data-based scientific investigation starts with a theory that the data “fills in.” In the case of choice, this initial framework is based explicitly on economic models; in fact, the field of *neuroeconomics* developed, in part, because neuroscientists found the basic economic model of decision-making a useful foundation for brain research.³⁴

If scientists start with a theory that implies perfect rationality, however, they set themselves—or rather, *us*—up for failure. As we’ve seen, many of these experiments show that our processes of rational thought are not as rational as researchers thought, and from that, they conclude that human decision-making is flawed. The problem is that their preconceived notion of perfect rationality is inaccurate as a description of human decision-making and therefore an inappropriate benchmark against which we compare our actual choice processes. This is like assuming that dogs can fly and then declaring all dogs to be “flawed” because they can’t. This position that human rationality could (or should) be perfect can be useful as a point for scientific investigation to begin with, a null hypothesis to be rejected in the face of evidence, but not a preexisting belief to be confirmed or defended, much less a goal to be sought. This attitude explains the pessimism reflected in every article that reports a new “flaw” discovered in our decision-making processes, as if we really thought human beings were perfectly rational all along. Even the designation of cognitive biases and heuristics as “flaws” is reflective of this: Something can only be designated a flaw if it prevents that thing from serving its “assigned” function, like a dog that cannot fly or a human being who, contrary to assumption, is not perfectly rational.

Philosophers have long known that human beings are far from perfectly rational. For example, Aristotle wrote about the weakness of will and temptation as aspects of human nature, advising the development of virtues such as temperance and practical wisdom to overcome them.³⁵ Immanuel Kant, a champion of the power of rationality, nonetheless acknowledged problems with real-world human thinking, and similar to Aristotle, he recommended perseverance and the maintenance of strength of character in the face of temptation.³⁶ These observations correspond to the models of dual-process thinking of psychologists and neuroscientists, such as

Kahneman's System 1 and System 2 thinking (or automatic and controlled processes); in this way, scientific thinking has confirmed what philosophers have said for hundreds or thousands of years and surprises us only because we adopted overly simplistic ideas about human rationality in the years between.

Some psychologists and behavioral economists deny that perfect rationality is or should be the ideal. Instead, they follow in the spirit of Herbert Simon and understand our various cognitive biases and dysfunctions as an integral part of an effective decision-making process for human beings in the real world. Working separately, both Nobel laureates economist Vernon Smith and psychologist Gerd Gigerenzer developed the concept of *ecological rationality*, which regards human beings' decision-making processes as successful adaptations to their lived environments, rather than idealistic conceptions of what those processes "should" look like in a realm of abstract theory disconnected from actual experience.³⁷ As Gigerenzer and behavioral economist (and jazz bass prodigy) Nathan Berg write, "When heuristics, or decision processes—or action rules—function well in particular classes of environments, then ecological rationality is achieved."³⁸ What Smith and Gigerenzer have in common is, while they offer ways for individuals to make better decisions in pursuit of their interests, they don't start with the assumption that rationality "would be" or "should be" perfect if not for the shortcomings we have as natural, evolved beings.

Before scientists—whether they be psychologists, behavioral economists, or neuroscientists—suggest an explanation for an observed response to changed stimuli, they should reconsider their preconceptions about how human decision-making processes work, specifically the wide range and complexity of interests that ground our decisions. As explained above, scientists often assume a version of the simple economic model of choice, a process of devoting scarce resources to achieve wants, goals, or "rewards," which themselves are assumed to be simple and often singular (such as food, happiness, or dopamine). In general, this is the scientific process at its finest, using Occam's razor to find the simplest explanation to observed phenomena that also stands up successfully to replication (that is, without being falsified by future observations or experiments). Scientists do this to avoid introducing arbitrary or *ad hoc* considerations into experiments that will distort the environment or introduce unnecessary complications.

However, as Albert Einstein is widely regarded as having said, scientific explanations "should be as simple as possible, but no simpler."³⁹ Deciding which factors to include in your model or experiment is a judgment call

based on the contributions and validity of each element, considered against the complication it introduces. Accordingly, a very simple model of choice is fine as long as none of the elements of choice that it leaves out are crucial to explaining the results of an experiment. For example, when studying the effects of “fake news” on likely voters, eye color can easily be left out of the equation; there is no reason to believe that people’s susceptibility to fake news is related to the color of their eyes. However, while eye color would not be worth including, income and education are more likely to be relevant, and leaving them out would risk skewing the results of the study, compromising its validity and therefore its value in terms of providing information and insight. If important factors are left out of a model, it will neither describe reality well nor enable scientists to use it to form accurate and valuable predictions about the future.

This is where scientists—and the readers, scholars, and policymakers who make up their audience—are poorly served by a simple model of choice that fails to recognize the multifaceted and complex nature of interests. If researchers assume that every choice individuals make is driven by a simple pursuit of a singular interest, they will fail to understand behavior that is driven by the myriad other aspects of human choice. If they do not appreciate that individuals’ choices are driven by principles and ideals as well as the pursuit of wealth, happiness, and other goals, they will not have these possible explanations at hand to interpret their observations, and instead, they will rely on only the tools provided by the basic model they use. In effect, the reliance on an overly simplistic conception of choice puts blinders on researchers who cannot see possible explanations of human behavior that lie outside the narrowly defined model they begin with, as we see every time a study confirming human beings’ altruistic and principled behavior is reported as “surprising.”

What makes this even more dangerous is that to many people, science has an illusory gloss of objectivity over it. In the popular understanding, science is shorthand for “knowledge” rather than a path to finding knowledge, a road that carries us forward to a brighter and better future but with a surprising number of bumps and twists.⁴⁰ Most people do not see the process behind science, the dedicated and brilliant but very human scientists in charge of the process, and much less the assumptions that they start the process with. As with any human institution, there are rules and standard within the scientific community to minimize the costs of these imperfections, but these safeguards are imperfect as well. Because most of us do not see the human side of the scientific process, we are likely to take

reports of “surprising” irrationality more seriously than we should, because of the automatic credibility we implicitly grant to reports of new scientific discoveries (and the little attention we pay to retractions). We are also more likely to accept policy recommendations based on science without questioning either the assumptions made in the scientific investigations themselves or the ethical judgment needed to bridge the gap between scientific findings (what we *can* do) and policy initiatives (what we *should* do), as we saw in our earlier discussion of the missing link between individuals’ bad choices and government nudges to help them make better ones. If we were more aware of the imperfections in the processes of scientific discovery and government policymaking, our own imperfections might not seem so bad!

WHAT THIS SAYS ABOUT US

While this misunderstanding of the nature of choice and interests is a problem for scientific practice and government policy, for the purposes of this book, the most problematic aspect of it is the image of the individual it leaves us with. When scientists and policymakers start with an unrealistic picture of how rational we “should” be and then discover that, in fact, we are not, the result is a picture of individuals as integrally flawed or broken. However, as we know, most people never seriously thought of human beings as perfectly rational to begin with. Certainly, we all make bad decisions from time to time, some of us more often than others and each of us more often in some circumstances than others. But only *we*, the decision-makers who are in a better position than anybody else to know the interests in which we make decisions, can know when they are bad. Rather than appreciating that individuals have multifaceted and complex interests in which they make choices—choices that may not always appear prudent to outside observers with no knowledge of these interests—these observers assume individuals are trying to achieve one goal and failing at it. They judge people’s choices by standards that have nothing to do with people’s own goals, like criticizing the dog who cannot fly, and they take it upon themselves to take steps to change these choices, all for people’s “own good” (despite what the people themselves might think).

Science can reveal valuable and fascinating information about the mechanics of how we make choices, but it cannot determine *why* we make them on the first place. It cannot tell us the interests we are trying to further by making them—only we can know those (and imperfectly at that). Psychologists, economists, and neuroscientists have all studied the

formation of preferences that, in their models, lead to choices, but they do not know the interests that ground those preferences.⁴¹ Researchers can observe changes in behavior or brain scans corresponding to changes in stimuli, but they cannot observe the causal link, which can only be inferred based on their preconception of the basic mechanisms at work in the mind or brain, which brings us back to the overly simplistic model of choice that denies the richness of actual human decision-making. Once again, because most people aren't aware of the preconceptions regarding choice that underlie these results, they too easily accept the pessimistic interpretation of these scientific results at face value.

The ultimate result of all of this is the devaluation of individuals' own choices and interests and, by extension, individuals themselves. By assuming an unrealistic, overly simplified idea of human decision-making processes, and then "discovering" that actual human choices do not match this model, the presuppositions held by researchers about the flawed nature of individuals' choice faculties are confirmed. In other words, they set up unreasonable expectations and then take the failure of these expectations to come true as evidence that they were right to doubt them to begin with. This then leads to policy prescriptions designed to help individuals make the decisions they would have made "if only" they were perfectly rational (which, by implication, the policymakers must be themselves) and acting in their true interests (which, by implication, policymakers know better than individuals do).

This picture is one of the individual human being as a broken machine, incompetent to act in its own (presumed) interests due to a flaw in its hardware or programming. Of course, actual machines, like objects or things in general, have no interests. Instead, they have a purpose or function assigned to them by a person, either the one who invented it or the one who uses it. For example, the designer of a chair probably focused on people's comfort while sitting, while the person who purchases it may use it as decoration or... um... a place to stack books. (Hypothetically, of course.) The purpose or function of the chair is not inherent in the chair itself, but rather in how a person uses it.

Individual persons, on the other hand, have their own interests, which are influenced by any number of factors including genetics, upbringing, culture, religion, family and friends, and choice. Many of these influences are subtle or unconscious, and their development may have been gradual, but no true interest that a person feels devoted to is simply "assigned" to her or him, but to some extent are endorsed by the person upon reflection

regarding how well that interest reflects his or her core values and character. (To what extent a person does this reflects her degree of *authenticity*, which we will discuss in the next chapter.) But the simple models of choice relied on by researchers and policymakers *do* assign interests to individuals as if they were objects or machines and then judge their choices to be “wrong” when they fail to further the interests “assigned” to them by those who presume to know better.

Another implication of viewing individuals as flawed machines is the way they are treated, aside from the presumption of their interests. For this point, I rely once again on Immanuel Kant, who drew a stark distinction between how we may treat persons and things: While things may be used simply as means to an end, persons must always be treated as ends in themselves.⁴² When researchers and policymakers influence people’s choices in interests which are not their own, they use these individuals as means to further ends which are not their own, often without the permission or even the knowledge of the individuals being affected. The benevolence of these third parties is irrelevant; it does not matter if they are sincerely trying to help people make better decisions. Because they are necessarily imposing interests on individuals in order to manipulate their concerns, they are using those individuals merely as means to these chosen ends and not as valuable ends in themselves. The policymakers are deciding for what purpose people should be making choices and interfering with these choices if they are not “correct,” never mind what the individuals themselves regard as their interests or choices toward them. As a result, they are not being treated as persons with dignity and autonomy, making choices in their own interests; they may not make these choices perfectly even by their own judgment, but this does not imply that they are flawed or broken as might be judged by outside observers with their own conceptions of the individual’s interests.

Most important, even the most complex machines have straightforward programming and hardware that knowledgeable people can understand and fix when they fail to support the purpose for which they were designed or used. But as we have seen, actual human decision-making processes are neither straightforward nor simple, and despite researchers’ presumptions, they do not follow the rules of elementary logic and rationality. As we have seen, our brains evolved to solve problems to promote survival and reproduction, and some of those evolved biases and heuristics do not serve us as well today as they did for our ancestors thousands of years ago. Modern researchers perform an invaluable service by exploring these

“quirks” in decision-making processes, but they should not presume to know, with any degree of certainty, what human beings’ ideal process of rational thought is—much less the interests in which we would implement it. But they do presume to know this, as if our “programming” were as knowable as that created by humans themselves. This presumption generates a self-fulfilling prophecy by establishing an impossible standard for rationality which real human beings will inevitably fail to meet, and also supports a distorted picture of individuals that diminishes their value and denies them the respect they are owed.

CONCLUSION

In this chapter, we surveyed several aspects of psychology, neurosciences, and economics that, while valuable in their own right, contribute to a decline in respect for the individual in society as a whole. To be clear, this is less a fault with the science itself and more a matter of how the scientific results are interpreted: specifically, in the context of a mistaken belief that human beings are, or should be, perfectly rational. Against this background, any scientific discovery or development that points out that we are not perfectly rational is taken as one more reason why our decision-making faculties are flawed and our cognitive competency is to be questioned.

Throughout this book, we will explore more dimensions and implications of this shifting attitude toward the value of individuals and their relationship to society. In the next chapter, we will see how trends toward quantification, seen in the growth of algorithms and Big Data in government, business, and our own lives, tend to change the way we see ourselves in the same way developments in psychology and neuroscience do. For example, population research simplifies each of us to what external observers regard as our shared and vague interests and other characteristics, and our uniqueness as individuals is obscured and eventually ignored. Individuals are treated as essentially similar, possessing the same core interests of wealth, health, and happiness, as defined by researchers and policymakers, and any deviation of individuals from this is assumed either to be irrelevant or to average out in the aggregate. We’ll see some of this emerge in the next chapter, which deals with the trend toward increasing quantification of human lives, by which the individual is represented, not by his or her character traits or personality, but by raw data, easily aggregated and analyzed by computer programs that do not realize the uniqueness of the individual.

NOTES

1. Thorstein Veblen, "Why Economics Is Not an Evolutionary Science," *Quarterly Journal of Economics* 12(1898): 373–397, at 389.
2. Herbert A. Simon, "A Behavioral Model of Rational Choice," *Quarterly Journal of Economics* 69(1955): 99–118.
3. Herbert A. Simon, "Rational Choice and the Structure of the Environment," *Psychological Review* 63(1956): 129–138. For more recent work in the same spirit, highlighting the difficulties of making good choices, see Barry Schwartz, *The Paradox of Choice: Why More Is Less* (New York: Harper, 2004), and Sheena Iyengar, *The Art of Choosing* (New York: Hachette, 2010).
4. There is a wealth of books introducing the novice to the basics of neuroscience; I would recommend the many works of Michael Gazzaniga, the most recently being the autobiographical *Tales from Both Sides of the Brain: A Life in Neuroscience* (New York: HarperCollins, 2015). If neurological disorders are more your cup of tea, I recommend Oliver Sacks' classic *The Man Who Mistook His Wife for a Hat: And Other Clinical Tales* (New York: Touchstone, 1998).
5. Most of this work is contained in the following volumes: Daniel Kahneman, Amos Tversky, and Paul Slovic (eds.), *Judgment under Uncertainty: Heuristics and Biases* (Cambridge: Cambridge University Press, 1982); Daniel Kahneman and Amos Tversky (eds.), *Choices, Values, and Frames* (Cambridge: Cambridge University Press, 2000), and Thomas Gilovich, Dale Griffin, and Daniel Kahneman (eds.), *Heuristics and Biases: The Psychology of Intuitive Judgment* (Cambridge: Cambridge University Press, 2002).
6. New research suggests this is more than an unconscious result, however; see Jeremy A. Frimer, Linda J. Skitka, and Matt Motyl, "Liberals and Conservatives Are Similarly Motivated to Avoid Exposure to One Another's Opinions," *Journal of Experimental Social Psychology* 72(2017): 1–12, and Russell Golman, David Hagmann and George Loewenstein, "Information Avoidance," *Journal of Economic Literature* 55(2017): 96–135.
7. Hugo Mercier and Dan Sperber, "Why Do Humans Reason? Arguments for an Argumentative Theory," *Behavioral and Brain Sciences* 34(2011): 57–74.
8. In the next chapter we'll talk about algorithms affect how that information is provided.
9. A fantastic popular treatment of the various biases and heuristics can be in Dan Ariely's now-classic *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (New York: Harper Perennial, 2010); for a more

- academic overview, see Erik Angner's *A Course in Behavioral Economics*, 2nd ed. (New York: Palgrave Macmillan, 2016).
10. This book is 100% fat-free and sugar-free.
 11. Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2011).
 12. We can even use these cognitive quirks to our advantage, as explained by Dan Ariely in his follow-up titled *The Upside of Irrationality: The Unexpected Benefits of Defying Logic* (New York: Harper Perennial, 2011).
 13. To be precise, there had long been a field called behavioral economics, but it was overtaken by this new approach. On the transition from the "old" behavioral economics (inspired by Simon's work) to the "new" behavioral economics (based on Kahneman and Tversky), see Esther-Mirjam Sent, "Behavioral Economics: How Psychology Made Its (Limited) Way Back into Economics," *History of Political Economy* 36(2004): 735–760.
 14. There has been pushback against behavioral economics. Richard Posner, a leading figure in the economic approach to the law, argued that behavioral economics does not propose anything that could not already be accommodated in traditional economic models of choice ("Rational Choice, Behavioral Economics, and the Law," *Stanford Law Review* 50(1998): 1551–1575, at 1552). On this theme, see also Richard McKensie, *Predictably Rational? In Search of Defenses for Rational Behavior in Economics* (Dordrecht: Springer, 2010).
 15. Douglas G. Whitman and Mario J. Rizzo, "The Problematic Welfare Standards of Behavioral Paternalism," *Review of Philosophy and Psychology* 6 (2015): 409–425, at 410.
 16. Gerd Gigerenzer, "On the Supposed Evidence for Libertarian Paternalism," *Review of Philosophy and Psychology* 6(2015): 361–383, at 365. For more on the relationship between traditional and behavioral economics, particularly in their shared reliance on the theoretical core of constrained preference satisfaction, see Nathan Berg and Gerd Gigerenzer, "As-if Behavioral Economics: Neoclassical Economics in Disguise?" *History of Economic Ideas* 18(2010): 133–165.
 17. Seminal work includes Christine Jolls, Cass Sunstein, and Richard Thaler, "A Behavioral Approach to Law and Economics," *Stanford Law Review* 50 (1998): 1471–1550; Russell B. Korobkin and Thomas S. Ulen, "Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics," *California Law Review* 88(2000): 1051–1144; Colin Camerer, Samuel Issacharoff, George Loewenstein, Ted O'Donoghue, and Matthew Rabin, "Regulation for Conservatives: Behavioral Economics and the Case for 'Asymmetric Paternalism,'" *University of Pennsylvania Law Review* 151(2003): 1211–1254.

18. Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (New Haven, CT: Yale University Press, 2008). This book was based on earlier academic work, especially Sunstein and Thaler, "Libertarian Paternalism Is Not an Oxymoron," *University of Chicago Law Review* 70(2001): 1159–1202, and Thaler and Sunstein, "Libertarian Paternalism," *American Economic Review Papers and Proceedings* 93(2003): 175–179.
19. Thaler and Sunstein, *Nudge*, Chap. 6.
20. *Ibid.*, pp. 1–4.
21. The term "libertarian paternalism" is provocative and controversial, as is implicit in the title of Sunstein and Thaler's paper "Libertarian Paternalism Is Not an Oxymoron." On the term itself, see Daniel B. Klein, "Statist Quo Bias," *Econ Journal Watch* 1 (2004): 260–271; Gregory Mitchell, "Libertarian Paternalism Is an Oxymoron," *Northwestern University Law Review* 99 (2005): 1245–1277.
22. For instance, see the UK's "nudge unit," the Behavioral Insights Team (<http://www.behaviouralinsights.co.uk/>), and their head David Halperin's book *Inside the Nudge Unit: How Small Changes Can Make a Big Difference* (London: WH Allen, 2015). In 2014 President Barack Obama instituted a similar initiative in the US government, the Social and Behavioral Sciences Team (<https://sbst.gov/>).
23. Some of this material was discussed in more detail in my earlier book, *The Manipulation of Choice: Ethics and Libertarian Paternalism* (New York: Palgrave Macmillan, 2013).
24. See Oren Bar-Gill and Elizabeth Warren, "Making Credit Safer," *University of Pennsylvania Law Review* 157(2008): 1–101; Michael S. Barr, Sendhil Mullainathan, and Eldar Shafir, "Behaviorally Informed Financial Services Regulation," New American Foundation (2008), available at http://www.newamerica.net/files/naf_behavioral_v5.pdf. For a critical view of this along the lines of my argument here, see my paper "Nudging Debt: On the Ethics of Behavioral Paternalism in Personal Finance," forthcoming in *Journal of Financial Counseling and Planning*.
25. Camerer et al., "Regulation for Conservatives," p. 1212.
26. For more on this, see my discussion of Cass Sunstein's *Why Nudge? The Politics of Libertarian Paternalism* (New Haven: Yale University Press, 2014), and Sarah Conly's *Against Autonomy: Justifying Coercive Paternalism* (Cambridge: Cambridge University Press, 2013), in my chapter "The Crucial Importance of Interests in Libertarian Paternalism" in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (New York: Springer, 2016), pp. 21–38.

27. Again, see my paper “Crucial Importance of Interests” for more on the nature of interests and their... well... crucial importance.
28. See, for example, Howard Margolis, *Selfishness, Altruism, and Rationality* (Chicago: University of Chicago Press, 1984) and Serge-Christophe Kolm’s “Introduction to the Economics of Giving, Altruism and Reciprocity” in Serge-Christophe Kolm and Jean Mercier Ythier (eds.), *Handbook of the Economics of Giving, Altruism and Reciprocity, Volume 1: Foundations* (North Holland: Elsevier, 2006), pp. 1–122.
29. On our difficulties with accurate self-knowledge, see Timothy D. Wilson, *Strangers to Ourselves: Discovering the Adaptive Unconscious* (Cambridge, MA: Harvard University Press, 2002); Valerie Tiberius, *The Reflective Life: Living Wisely with Our Limits* (Oxford: Oxford University Press, 2008), chapter 5; and Quassim Cassam, *Self-Knowledge for Humans* (Oxford: Oxford University Press, 2015).
30. Philosophers and economists often use the concept of *ideal* or *rational preferences* to represent what preferences a person would have if, in the words of Nobel-winning economist John Harsanyi, “he had all the relevant factual information, always reasoned with the greatest possible care, and were in a state of mind most conducive to rational choice” (“Morality and the Theory of Rational Behavior,” reprinted in Amartya Sen and Bernard Williams (eds.), *Utilitarianism and Beyond* (Cambridge: Cambridge University Press, 1982), pp. 39–62, at p. 55). The problem with ideal preferences is that they represent a counterfactual, an exercise in imagining a world different from our own. Furthermore, they involve the same value judgments as in presuming interests; as economist Robert Sugden asks, “How, without making normative judgments, do we determine what counts as complete information, unlimited cognition, or complete will-power? Even if we can specify what it would mean to have these supernatural powers, how do we discover how some ordinary human being would act if he were somehow to acquire them?” (“Why Incoherent Preferences Do Not Justify Paternalism,” *Constitutional Political Economy* 19(2008): 226–248, at p. 232).
31. For example, see my *The Manipulation of Choice*; Riccardo Rebonato, *Taking Liberties: A Critical Examination of Libertarian Paternalism* (New York: Palgrave Macmillan, 2012); and Gilles Saint-Paul, *The Tyranny of Utility: Behavioral Social Science and the Rise of Paternalism* (Princeton, NJ: Princeton University Press, 2011).
32. This is not to mention the deleterious effect of nudges on decision-making processes themselves, for at least two reasons: nudges absolve persons of responsibility for their actions and deny them of important feedback from making bad decisions, and many nudges reinforce our cognitive biases and dysfunctions rather than reducing their influence. For more, see Jonathan

- Klick and Gregory Mitchell, "Government Regulation of Irrationality: Moral and Cognitive Hazards," *Minnesota Law Review* 90(2006): 1620–1663.
33. See Paul W. Glimcher and Ernst Fehr, "Introduction: A Brief History of Neuroeconomics," in *Neuroeconomics: Decision Making and the Brain*, 2nd ed. (Amsterdam: Elsevier, 2014), pp. xvii–xxviii, which cites a seminal paper that "argued quite explicitly for a normative utility-based analysis of choice behavior in monkeys" (p. xxiv, citing M.L. Platt and Paul W. Glimcher, "Neural Correlates of Decision Variables in Parietal Cortex," *Nature*, 400(1999): 233–238).
 34. See Glimcher and Fehr, "Introduction: A Brief History of Neuroeconomics," as well as Colin Camerer, George Loewenstein, and Drazen Prelec, "Neuroeconomics: How Neuroscience Can Inform Economics," *Journal of Economic Literature* 43(2005): 9–64. Both pieces give substantial background into basic cognitive neuroscience as well as the various ways it has informed economics (and vice versa).
 35. See Aristotle, *Nicomachean Ethics*, 350 BCE, translated by W.D. Ross, Book VII (available at the Internet Classics Archive, <http://classics.mit.edu/Aristotle/nicomachaen.7.vii.html>).
 36. See Immanuel Kant, *The Metaphysics of Morals*, translated and edited by Mary J. Gregor (Cambridge: Cambridge University Press, 1797/1996), pp. 408–409; see also my *Kantian Ethics and Economics: Autonomy, Dignity, and Character* (Stanford: Stanford University Press, 2011), pp. 57–59.
 37. Vernon L. Smith, *Rationality in Economics: Constructivist and Ecological Forms* (Cambridge: Cambridge University Press, 1999); Gerd Gigerenzer, *Rationality for Mortals: How People Cope with Uncertainty* (Oxford: Oxford University Press, 2010).
 38. Berg and Gigerenzer, "As-if Behavioral Economics," 21.
 39. See this post at the Quote Investigator regarded the origin of this quote: <http://quoteinvestigator.com/2011/05/13/einstein-simple/>. A longer passage that does apply specifically to scientific theory appears in his 1933 Herbert Spencer Lecture: "It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience" ("On the Method of Theoretical Physics," *Philosophy of Science*, 1(1934): 163–169, at 165).
 40. One terrific resource for explaining how science really works is "Understanding Science" (<http://undsci.berkeley.edu/>), a website produced by the Museum of Paleontology at the University of California at Berkeley.

41. For example, see Paul Slovic, “The Construction of Preference,” *American Psychologist* 50(1995): 364–371; Amos Tversky and Richard Thaler, “Anomalies: Preference Reversals,” *Journal of Economic Perspectives* 4 (1990): 201–211; Mkael Symmonds and Raymond J. Dolan, “The Neurobiology of Preferences,” in Raymond J. Dolan and Tali Sharot, eds., *Neuroscience of Preference and Choice: Cognitive and Neural Mechanisms* (Amsterdam: Elsevier, 2012), pp. 3–31; and the chapters in Part II (“Neural and Psychological Foundations of Economic Preferences”) of Glimcher and Fehr, *Neuroeconomics*.
42. See Kant, *Grounding for the Metaphysics of Morals*, translated by James W. Ellington (Indianapolis, IN: Hackett Publishing Company, 1785/1993), pp. 428–429. For more discussion of this essential Kantian concept, see Roger J. Sullivan, *Immanuel Kant’s Moral Theory* (Cambridge: Cambridge University Press, 1989), pp. 195–198. Some astute readers may recognize this wording from Kant’s famous—or infamous—categorical imperative, which we’ll encounter later in this book. (I promise!)



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