Introduction

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If you look in the dictionary under *policy*, *public policy*, or *social policy*, you find definitions that amount to the following: a system of regulatory measures, laws, principles, funding priorities, guidelines and interventions promulgated by a person, group, or government for the changing, maintenance or creation of living conditions that are conducive to human welfare. Mostly what these measures, laws, principles, and interventions are intended to do is to shape society in desirable ways: to promote behaviors that yield outcomes conducive to human welfare. Successful policy, therefore, must depend on a thorough understanding of human behavior. What motivates and incentivizes people when they snap into action as opposed to procrastinate, obey or disobey the law, understand or misunderstand, act or fail to act on their intentions, care or do not care, attend or get distracted? How do they perceive their decisions and the options at their disposal? How do they think about what others are doing? These are all questions that must be addressed for the design and implementation of policies to prove successful.

In light of the centrality of behavioral assumptions to policy, it is remarkable how small a role the attempt to understand human behavior has played in policy circles, as well as in the social sciences more generally. It is particularly remarkable because, as we have now come to understand, much of our intuition about human behavior fails to predict what people will do. And policies based on bad intuitive psychology are less likely to succeed and can often prove hurtful. As the economist John Maurice Clark pointed out nearly a century ago, if the policy maker does not seriously study psychology, "he will not thereby avoid psychology. Rather, he will force himself to make his own, and it will be bad psychology" (*Journal of Political Economy*, 1918).

Bad psychology comes in many forms. A naive understanding of incentives, for example, might suggest that paying people some small amount (rather than nothing) to perform a societally desirable act could only increase instances of that act; instead, it turns out that the loss of the "psychic" benefit of having been a good citizen (which is largely neutralized by the monetary remuneration) can, in fact, reduce take-up. Alternatively, presenting lineups (where suspects are observed concurrently) versus show-ups (where they are seen one at a time) may appear normatively indistinguishable, but we now know that the former leads to more false identifications than the latter. Similarly, having workers opt out of, rather than opt into, retirement savings accounts, looks like an immaterial nuance, except that the former, for predictable reasons and for what amounts to very little cost, generates many more happy retirees than the latter.

A careful consideration of the role of psychology in public policy took many years to develop even after Clark's warning about the dangers of bad psychological assumptions. An important turning point was the behavioral critique of the economic assumptions underlying individual decision making begun by cognitive and social psychologists in the 1970s. This was eventually reinforced by the economic profession's gradual, even if reluctant, acceptance of the behavioral critique and led to increased research applying behavioral insights to studies of choice and judgment in everyday life. Now, almost a half century after the emergence of the modern critique, the behavioral perspective occupies a respectable and increasingly popular niche in many graduate programs in economics, business, law, policy, and the social sciences more generally. And thus we have arrived at a point where it is only natural to explore how best to incorporate elements of the behavioral perspective into policy thinking.

The behavioral findings provide an alternative view of the human agent. Many aspects of decision making that the normative analysis assumes do not matter (such as how the options are described, as long as the same information is given) prove highly consequential behaviorally, and other factors that are normatively assumed to be of great importance (such as whether an intervention will help save 1,000 birds or 10,000 birds) are, instead, intuitively largely ignored. At the most general level, a couple of deep lessons have emerged that are of great potential relevance to policy makers: the relevance of context and the unavoidability of construal.

Human behavior tends to be heavily context dependent. One of the major lessons of modern psychological research is the impressive power that the situation exerts, along with a persistent tendency on our part to underestimate this power relative to the presumed influence of personal intentions and traits. In his classic obedience studies, for example, Milgram (1974) demonstrated the ability of decidedly mild situational factors to trigger behaviors on the part of regular citizens, such as the administration of presumed electric shocks to innocent others, that were unfathomable to naive introspection. Along similar lines, Darley and Batson (1973) showed how seminary students on their way to deliver a sermon on the parable of the Good Samaritan were willing to walk right past an ostensibly injured man, slumped coughing and groaning, simply because they were running late. Minor contextual features were shown in these cases to override people's professed intentions and their deeply held convictions. To the extent that such minor contextual features are able to transcend education, personality, and intention, policy makers appear to have powers of influence that they underappreciate, may unintentionally misuse, and could, given some behavioral insight, employ better.

The second lesson, which is fundamental to the cognitive sciences in general, concerns the role of "construal" in mental life. People do not respond to objective experience; rather, stimuli are mentally construed, interpreted, and understood (or misunderstood). While this claim risks sounding deep, it is actually trivial, but with profound consequences: behavior is directed not toward actual states of the world but toward mental representations of those states, and those representations do not bear a one-to-one correspondence with the states they represent. In fact, the representations we construct may not even constitute faithful renditions of actual circumstances. Our visual experience, for example, is the product of complex processes that take raw visual input (say, a trapezoid when we look at a window from the side) and use contextual cues to represent what is "really there" (a perfectly rectangular window). Anytime those cues are misleading, we end up with a false representation, as in the case of well-known optical illusions. How we interpret attitudes and emotions is similarly a matter of construal. And, as it turns out, so is our representation of many objects of judgment and preference. We can only decide between things as they are represented in the three-pound machine that we carry behind the eyes and between the ears. And those representations are the outcome of mental processes that, to some extent at least, have a life of their own.

For policy makers all this should be of the utmost importance. Policies' success depends on human behavior. And behavior is determined not simply by what is available, but by what people know, perceive, understand, attend to, and want. Thus, well-intentioned interventions can fail because of the way they are construed by the targeted group. And the difference between success and failure can sometimes boil down to a relatively benign and normatively immaterial change in presentation and construal, rather than a complex and costly rearrangement of the available alternatives.

About fifteen years ago, we began a joint formal program of training in "psychology for policy" between the psychology department and the Woodrow Wilson School of Public and International Affairs at Princeton University. The endeavor was new at the time, and the results of the initiative were not entirely predictable. What were some of the more important policy questions to which a behavioral analysis could significantly contribute? Where in policy did misguided behavioral assumptions figure most prominently, where were they of lesser importance, and what exactly were they anyway? How was one to go about researching and communicating all this? And would it make a difference? As often happens when ideas gather momentum, we were not alone. An increasingly talented and interdisciplinary group of scholars had grown interested in research along similar lines and in issues of both behavioral and policy significance.

The present volume presents some of the more impressive outcomes of this important work, as conceived and summarized by many of the leading scholars in the field. The wide array of topics covered here should appeal to students of human behavior interested in real-world applications. More importantly, the chapters in this volume were prepared with an eye toward a sophisticated audience with no behavioral training. The application of experimental findings and concepts emanating from behavioral research to the design and implementation of policy—call it "behavioral policy"—is an exciting and rapidly expanding new area of research and study. The present collection is intended to expose policy makers, practitioners, government officials, business leaders, legal, ethical, and health professionals, as well as students interested in societal, domestic, and international challenges, to a perspective that can shed new light. Greater insight into human behavior, the authors in this volume agree, can prove helpful, both in making sense of what are otherwise persistent puzzles, as well as in generating novel ideas and effective solutions.

The contributions to this collection tend to be highly interdisciplinary and thus hard to compartmentalize. Nonetheless, the sheer amount of material presented in this volume warrants some minimal organization in the hopes of facilitating the reader's task. Chapters are divided by general topics but are

otherwise independent and can be read in any order; occasional cross-references occur when the materials of separate chapters are especially complementary. The aim of each chapter is to provide the reader with an overview of how research in the behavioral sciences might influence our understanding and the conduct of good policy in a particular domain. Ultimately, we hope the reader will come to see the foundational role that behavioral assumptions must come to play in shaping the successful design and implementation of policy.

The Chapters

The early chapters focus on behavioral issues that arise in the conduct of our social and political lives. They focus on policy-relevant topics ranging from the nature of intuitive social judgment and "automatic" social perceptions to the valuation of social belonging and concerns with identity, justice, and fairness; problems ranging from discrimination in the work place to the numbing that comes with hearing about mass atrocities.

A common thread running through these contributions is that the empirical findings are often in tension both with normative assumptions as well as with common intuition. As a result, they have far-reaching consequences for how we think about policy design and implementation. We tend to think, for example, that people's behavior largely mirrors their beliefs and that their choices are typically about tangible, value-maximizing outcomes. Thus, we might assume, those who are not prejudiced will typically not exhibit prejudiced judgment, and if voting is unlikely to have a tangible impact, people will not bother to vote. Similarly, the intuition goes, negotiators whose persistent biases lead to impasse will learn to overcome them, and managers whose unintended discriminatory practices hurt their business will learn to avoid discriminating.

In contrast to all that, as the chapters below illustrate, people care a lot about intangibles, they exhibit persistent biases in social perception, and they lack introspective access to the biases and the motivations that often are in tension with their better judgment. As a result, people often fail to recognize the discrepancies between their beliefs and their actions, which, rather than resolving themselves in the long run, often end up playing a big role in exacerbating long-standing political and social tensions.

Prejudice and Discrimination

In the opening chapter, on implicit prejudice, **Curtis Hardin** and **Mahzarin Banaji** argue that our views of

prejudice and discrimination are based on outdated notions, with important policy implications. Rather than arising from ignorance and hatred, which would be best addressed by changing the hearts and minds of individuals, prejudice and stereotyping, according to these authors, emerge from cognitively salient structures in our social milieu and do not necessarily involve personal animus, hostility, or even awareness. Rather, prejudice is often "implicit"—that is, unwitting, unintentional, and uncontrollable—even among the most well intentioned. At the same time, these authors suggest, research shows that implicit prejudice can be reduced through sensible changes in the social environment.

The social environment figures prominently in **Nicole Shelton**, **Jennifer Richeson**, and **John Dovidio**'s chapter on intergroup biases in interracial interactions. The goal of this chapter is to explore how racial bias can influence affective, cognitive, and behavioral outcomes during interracial interactions, especially among those who do not harbor explicitly racist attitudes. This question is examined in a variety of contexts, including students sharing dorm rooms on university campuses and interactions between White physicians and racial minority patients in health care settings. A central message that emerges from these interactions is that bias is expressed in subtle ways: as strained relationships between roommates, as less effective interactions between physicians and patients, and as lower levels of rapport in employment interviews. In each of these cases, there is rarely an obvious act of blatant discrimination. Instead, the complex and often subtle nature of contemporary intergroup bias, for which traditional policies designed to respond to overt discrimination are ill suited, can have widespread impacts on intergroup interactions, often with different consequences for members of different racial and ethnic groups. Shelton et al. conclude with a review of common practices and interventions that policy makers could use to maximize the benefits of diversity across policy-relevant settings.

In their chapter on gender bias, **Susan Fiske** and **Linda Krieger** consider the legal ramifications of unexamined gender discrimination, particularly as it plays out in employment contexts. They review recent behavioral and neuroscience research that challenges the rational-actor assumption underlying much of the debate over discrimination law and policy. Decision makers, according to Fiske and Krieger, cannot always make optimal employment decisions, because, even when they consciously support equal opportunity norms, subtle, unexamined forms of gender bias may prevent them from accurately perceiving decision-relevant information, or from optimally using it to make employment decisions. Managers may explicitly endorse equal opportunity, but unexamined prejudices

might nevertheless derail their choices. Fiske and Krieger consider the kinds of initiatives that organizations might undertake in an attempt to reduce the levels of workplace discrimination caused by unexamined, subtle bias. They also advocate for policy initiatives, including a mandatory information disclosure approach to equal opportunity employment policy, which they suggest might help squeeze discrimination out of labor markets in ways that circumvent the need to identify individual instances of discriminatory decision making.

Social Interactions

In his chapter on the psychology of cooperation, **Tom Tyler** argues that, while incentives and sanctions matter, standard normative approaches place too much emphasis on issues of material gains and losses. Tyler analyzes laboratory and field studies that illustrate several types of social motivations—attitudes, values, personal identity, procedural justice, and motive-based trust—that have a strong influence on behaviors in social settings. Tyler focuses on the problem of motivating cooperative behavior and suggests that policy makers have a great deal to gain from expanding their conception of human nature and recognizing the importance of social motivations in shaping people's behavior in groups and organizations.

Along related lines, **Todd Rogers**, **Craig Fox**, and **Alan Gerber** propose an alternative conceptualization for why people vote. Rather than the standard self-interested view, which cannot explain the decision to vote given the miniscule probability that one's vote will affect the outcome, the authors propose to think of voting as a "dynamic social expression." Voting, according to this perspective, is the outcome of a dynamic constellation of events that extend over time; it is an inherently social act, and it is ultimately an expression of one's identity. Among other things, Rogers, Fox, and Gerber describe recent experimental field research into effective get-out-the-vote campaigns, thereby linking the question of why people vote to an array of behavioral research—including social and cognitive psychology and behavioral economics—that has not been systematically linked to voting behavior in the past.

In his chapter on disagreement, **Lee Ross** considers several cognitive and motivational processes and the role they play in adding hostility and distrust to policy disagreements, and how they serve as barriers to dispute resolution. Among other constructs, he considers the *reactive devaluation* of proposals put forth by the other side and the role of *naive realism*, the conviction that one sees things objectively and clearly, which tends to add rancor to disagreement

insofar as it creates the expectation that other reasonable and honest people ought to share one's views. (This perspective was well captured by comedian George Carlin's observation about driving: "Ever notice that anyone going slower than you is an idiot and anyone going faster is a maniac?") Informed by the foregoing analysis, Ross then considers several behaviorally informed strategies for overcoming barriers to agreement.

Finally, in their chapter on psychic numbing, **Paul Slovic**, **David Zionts**, **Andrew Woods**, **Ryan Goodman**, and **Derek Jinks** ask why people repeatedly fail to react to genocide and other mass-scale human atrocities. It is not, they argue, because people are insensitive to the suffering of their fellow human beings, or even that most only care about identifiable victims of similar skin color who live nearby. Rather, they suggest, a fundamental problem lies in people's incapacity to experience commensurate *affect*, the positive and negative feelings that combine with reasoned analysis to guide action. Left to its own devices, moral intuition appears to respond more to individual stories that are easier to imagine than to statistics of mass atrocities, which fail to spark commensurate affect and motivate appropriate action. Even when we know genocide is real, we do not "feel" that reality. The authors explore some behaviorally informed ways that might make genocide "feel real," but they are ultimately led to the conclusion that we cannot rely on intuitive reactions and must instead commit ourselves to institutional, legal, and political responses that are less susceptible to psychic numbing and more heavily based upon reasoned analysis of our moral obligations.

The Justice System

The rational agent model has figured prominently in many areas of the law. At the same time, much of what comes under the law depends on the impulses, intuitions, judgments, sense of confidence, emotional reactions, and everyday understandings of regular citizens when they act as witnesses, jurors, colleagues, employers, employees, and so forth. And because the legal system is heavily in the business of constructing rules and procedures, there is much room to think about how these can be better shaped by a nuanced understanding of human capabilities, proclivities, and limitations.

In their chapter on eyewitness identification and the legal system, **Nancy Steblay** and **Elizabeth Loftus** focus on issues of eyewitness memory, such as the fact that faulty eyewitness memory has been implicated in a majority of (mostly DNA-based) exonerations. They review the main lessons from the science of eyewit-

ness memory and consider their implications for improving the legal system whenever eyewitnesses are playing a crucial role. They provide a primer on the essential memory principles underlying eyewitness performance, including the fact that this experience is not just a memory phenomenon, but that it also reflects social forces, including, for example, subtle and unintentional verbal and nonverbal communications from others. What emerges is the potential for memory to be contaminated, distorted, and yet reported with great confidence, which proves of great relevance to a legal system that depends on and believes in eyewitness veracity and in which many people become criminal defendants on the basis of eyewitness identification. Steblay and Loftus describe the ongoing research effort around the topic of eyewitness testimony, the changes in legal policy spurred by the collaboration between behavioral scientists and those in the legal field, and the challenges that persist in the application of memory research to public policy.

In "False Convictions," **Phoebe Ellsworth** and **Sam Gross** extend the analysis of the rate and persistence of false convictions to a variety of psychological, social, and institutional factors beyond eyewitness identification. They first highlight the inherent difficulty of detecting false convictions, where the only ones we know of (and even there we could be wrong) are exonerations: those rare cases in which a convicted criminal defendant—typically in the most serious of cases, the only ones to receive sufficient attention and resources—is able to prove his innocence after the fact. Ellsworth and Gross consider the social and institutional context that characterizes criminal investigation and adjudication under the adversarial system. They analyze the proclivity of the process to give rise to worrisome behavioral phenomena, including confirmation biases, eyewitness misidentification, false confessions, fraud and error on the part of forensic analysts, perjury by jailhouse informants and other witnesses, misconduct by police and prosecutors, and incompetent representation by criminal defense attorneys. Ellsworth and Gross describe the relevant work by social scientists and legal researchers and consider some areas for future policy enhancement.

In a chapter focusing on behavioral reactions to wrongdoing, **John Darley** and **Adam Alter** explore the nature and consequences of potential gaps between legal codes and community sentiments regarding punishment, retribution, and deterrence. They first review research on people's perceptions of wrongful actions and the punishments those actions deserve. They conclude that people are driven by emotionally tinged reactions of moral outrage and that their punishment decisions are largely based on what they intuitively believe the offender justly deserves. They then consider conventional approaches to dealing with crime, punishment, and deterrence and conclude that in light of what we know about human cognition and behavior, those approaches are largely ineffective. For example, whereas our penal system focuses heavily on sentence duration, sentence duration is generally an ineffective deterrent, as compared, for example, to salient surveillance mechanisms. Darley and Alter consider relevant policy implications, while keeping in mind that citizens' intuitive perceptions of justice will place limits on the types of societal punishment practices that will be perceived as fair and that legal codes that clash with those moral sensibilities can cause citizens to lose respect for the law.

Bias and Competence

Of great relevance to policy are the circumstances in which people exhibit systematic bias or fail to weigh appropriately the factors that matter most to a decision. In other circumstances, people may perform the requisite tasks exceedingly well. This contrast is heightened by the fact that it is often hard for people to anticipate when they might expect bias as opposed to remarkable judgmental acuity. Things that ought not matter from a normative perspective often do, and things that ought to matter often fail to have an impact. The chapters in this section are motivated by the assumption that greater awareness and the proper anticipation of bias and other behavioral limitations may help devise more effective policies.

In their chapter on claims and denials of bias, **Emily Pronin** and **Kathleen Schmidt** explore the far-reaching policy implications of people's perception that their own judgments are relatively free of bias whereas others' judgments are susceptible to it. People's tendency to be blind to their own biases while exaggerating those of others can lead to a range of problems, among which are social conflict, breakdown of negotiations, corruption, and discrimination. Pronin and Schmidt examine the central behavioral underpinnings of this "bias blind spot" and consider potential solutions, including increased awareness, education, and psychologically savvy disclosure requirements, with an emphasis on how to make those solutions psychologically informed and thus more effective.

In "Questions of Competence: The Duty to Inform and the Limits to Choice," **Baruch Fischhoff** and **Sara Eggers** discuss the nature of assumptions about people's competence that figure, often implicitly, in a wide range of regulatory and policy domains. For example, product disclosure requirements reflect beliefs about people's ability to recruit and comprehend the relevant information, and policies governing

living wills reflect assumptions about our ability to anticipate the relevant circumstances. When competence is underestimated, they argue, people's freedom to make their own decisions may be needlessly curtailed, whereas when competence is overestimated, they may be denied important protections. The chapter considers several applications to risk-related decisions in U.S. policy contexts (including drugs, pathogens, and contaminants) in its attempt to offer a general approach to assessing and, where possible, improving individuals' competence to make the requisite decisions.

In his chapter on misfearing and cost-benefit analysis, **Cass Sunstein** argues in support of cost-benefit analysis as a way of counteracting the problem of misfearing, that is, people's tendency to misperceive risks. Whereas cost-benefit analysis is often justified on conventional economic grounds, as a way of preventing inefficiency, Sunstein argues for it on grounds associated with cognitive and social psychology, including concepts such as availability and salience, informational and reputational cascades, intense emotional reactions, motivated reasoning, and causal misattribution, all of which can lead people to be afraid of fairly trivial risks and neglectful of serious ones. Such misfearing, Sunstein suggests, plays a significant role in public policy because of the power of self-interested private groups and ordinary political dynamics. And when misallocations of public resources result from misfearing and associated problems, cost-benefit analysis can operate as a corrective, a way of ensuring better priority setting and of overcoming behavioral obstacles to desirable regulation.

Behavioral Economics and Finance

Behavioral research in economics and finance has explored the systematic ways in which people's preferences are in tension with standard assumptions underlying the classical theories of choice. Among other things, people tend to focus on perceived departures from the status quo rather than on final assets, they exhibit unstable discount rates, and they tend to be loss averse—the dread of losses is greater than the savoring of equivalent gains. Intangibles such as fairness and inertia matter a lot, and decisions are often made "locally," with much reliance on features that loom large at the moment, often at the expense of long-term objective outcomes. All this puts a greater burden on policy design, since minor and normatively inconsequential changes can make the difference between policies that succeed and those that fail.

This type of analysis, in the context of retirement saving plans, is illustrated by **Shlomo Benartzi**, **Ehud Peleg**, and **Richard Thaler**, who apply behavioral principles to the study of the choices made by employees saving for retirement. Exploring notions ranging from decision inertia and nominal loss aversion to discounting and the synchronization of saving increases with pay raises, they show how supposedly minor details in the architecture of retirement plans can have dramatic effects on investment decisions and savings rates. More generally, they suggest, such insights into the architecture of decision have the potential to help people make better decisions, a theme Thaler returns to in a chapter with Balz and Sunstein later in the book.

Applying a behavioral economic analysis to employment law, **Christine Jolls** considers the lessons of behavioral analysis for legal requirements and rules that govern employer-employee relationships, ranging from wage payment and pension regulation to minimum wages, mandated health insurance, workplace leave, and discrimination laws. The effects of employment law, Jolls argues, turn in significant part on people's behavior in employment settings, which can be illuminated by consideration of bounded willpower, bounded self-interest, and bounded rationality. Thus, errors in intuitive judgment have implications for employment discrimination law, and different rules may prove more effective in encouraging retirement saving by individuals with bounded willpower. Furthermore, a "fairness dynamic"—one in which employers choose to pay employees more than the minimum they would accept and employees respond by working harder than they otherwise would—has implications for minimum wage regulation. The employment relationship, Jolls concludes, is one of life's most important relationships, and it can greatly benefit from a behavioral economic perspective.

In their chapter on decision making and policy in contexts of poverty, **Sendhil Mullainathan** and **Eldar Shafir** present a behaviorally motivated framework for understanding the decisions of the poor. Motivated by empirical insights on judgment and decision making that are supplemented by lessons from social and cognitive psychology, they ask how we might explain behaviors in poverty and how might similar behaviors have different consequences when people are poor. They conclude with recent work in which poverty is viewed as a context that creates unique challenges for the human psyche, above and beyond budgetary woes. Poverty itself, according to Mullainathan and Shafir, generates specific psychological responses that are endemic to functioning with little slack and with constant vigilance and that can lead to distraction, miscalculation, and depletion. This, they propose, suggests new approaches to policy making that are focused on programs that foster stability and give people the financial and psychic steadiness needed to build more robust economic lives.

Behavior Change

Subtle changes in the context of decision can have a significant, and normatively unexpected, impact on the course of action taken. And this has important implications for the familiar tension between intention and action. In the face of contextual obstacles (which can range from transportation to shame to forgetfulness), people can fail to act even when they have a strong intention to do otherwise. In contrast, when the context is designed to facilitate certain actions, those actions might be taken even when resolve is not terribly high. Contextual cues and interventions, incentives, and decision aids, sometimes quite subtle and limited in scope, can have substantial impact even in contexts where preferences otherwise appear clear and strong. This, of course, only increases the onus on policy makers to construct and implement policies that are behaviorally insightful and thus more likely to have the desired effects. It also suggests that at times the passage from a policy that is not working to one that does may require different, and perhaps more nuanced (and affordable), changes, ones that address how people construe a problem and what that construal leads them to do.

In their chapter on the psychological levers of behavior change, **Dale Miller** and **Deborah Prentice** focus on circumstances in which policy makers wish to help people change their behavior in ways that align with these people's own long-term interests and stated wishes. Miller and Prentice analyze the capacity of various interventions to move people toward desirable behavior and away from undesirable behavior, with a special emphasis on the psychological constructs and processes that produce behavior change. Among other things, they illustrate ways in which economic and psychological incentives can combine in complex ways, producing counterintuitive effects from economic taxes and subsidies. They outline how efforts to change behavior must begin with a careful analysis of the motivational dynamics bearing on the status quo and the levers that can be used to change them.

In his chapter, "Turning Mindless Eating into Healthy Eating," **Brian Wansink** considers some of the basic processes behind a variety of environmental factors that influence food consumption. Package size, plate shape, lighting, socializing, and the visibility, variety, size, and accessibility of food are only some of the environmental factors that influence the volume of food consumed and are considered likely to have contributed to an ever-widening obesity problem in many places. Understanding these drivers of consumption volume has immediate implications for nutrition education and consumer welfare, but education and increasing awareness are unlikely to be the solutions, Wansink argues, because the effects occur at perceptual levels of which we are not aware. Instead, he lists some behaviorally informed principles that academics, industry, and government can use when partnering to make tangible health-related changes in the lives of individuals.

In "A Social Psychological Approach to Educational Intervention," **Julio Garcia** and **Geoffrey Cohen** focus on the psychological causes of academic underperformance, particularly the racial achievement gap observed in American schools. Among others, they describe psychological interventions that focus on the presence of an "identity threat" and that when systematically applied have been found to close the achievement gap. At the heart of their analysis is the notion of the classroom as a tension system in which various factors, both structural and psychological, interact to produce an environment that elicits a set of attitudes, behaviors, and performance. By heightening the impact of factors facilitating performance or lessening the impact of factors that impede it, interventions can alter students' psychological environments. This analysis leads Garcia and Cohen to conclude that well-timed interventions targeting important psychological processes can produce effects on performance that appear disproportionately large. Throughout, they discuss the implications for social policy that follow from their approach.

Improving Decisions

Systematic tendencies, ranging from an inadequate weighing of likelihoods to excessive discounting of the future to an inability to simulate future feelings, can all interfere with the making of optimal decisions. Furthermore, limited mental resources and attention have important implications for people's abilities to budget, save, invest in mitigation against natural disasters, or bother to develop a long-term collective perspective. What repeatedly emerges as important is not sheer human ability, which can be impressive, but the fact that intuition, attention, and understanding can be tapped into in ways that are less or more likely to succeed. The contributions that follow consider behaviorally informed ways in which policy makers might help people reach better decisions, individually and collectively.

Going beyond issues of mere comprehension, **Peter Ubel** considers the use of medical decision aids to improve people's "preference sensitive decisions," where the decision maker, when left to her own devices, might not make the right choice. In particular, what is envisioned is a neutral party to help the patient make a decision consistent with her underlying goals and preferences. Experts on decision aids, Ubel argues,

have typically assumed that if you give decision makers full information and the freedom to choose, they will experience reduced conflict and higher satisfaction and will make decisions that reflect their true preferences. Instead, he suggests, decision counselors need to go beyond increased comprehension and conflict reduction, in light of much evidence showing that people who comprehend their options nevertheless can make bad decisions, and that good decisions can still leave people deeply conflicted. Toward that end, Ubel evaluates the strengths and weaknesses of several criteria by which to determine whether a structured decision aid has helped people make good preference-sensitive decisions.

In their chapter, "Using Decision Errors to Help People Help Themselves," **George Loewenstein**, **Leslie John**, and **Kevin Volpp** argue that having identified a variety of systematic decision errors, behavioral researchers are in a good position to provide policy solutions that make use of those same errors to people's benefit. They show how a wide range of decision phenomena that are typically viewed as errors—including the status quo and default bias, loss aversion, overoptimism, and nonlinear probability weighting, among others—can be exploited to help people accomplish their goals, ranging from saving money and losing weight to drug adherence and charitable giving. They also consider whether such errors could be exploited to deal with broader societal problems such as global warming. There are, according to Loewenstein, John, and Volpp, many economic entities that exploit consumers' mistakes. Instead of leaving consumers to fend for themselves, we ought to harness the same errors that are regularly used to exploit them to instead help make people better off.

In her chapter exploring the insights of behavioral decision research for better environmental decisions, **Elke Weber** starts by outlining the logic of environmental policy decisions, which typically include social and economic dimensions, considerations of fairness or equity and considerable uncertainty involving intertemporal tradeoffs and which require foresight, patience, and persuasion. Because environmental goods like clean air, drinkable water, and species diversity are common-pool resources, rational analysis essentially prescribes shortsighted behaviors even if more longsighted and cooperative solutions are socially desirable. Informed by social cognition and behavioral decision research, Weber argues that insights into unconscious and social inferential and decision processes, as well as into people's limitations in attention, memory, and information processing, can help guide the design of more promising environmental policies. Behaviorally informed considerations, she argues, suggest that people might be induced to act in more

collective ways that increase their own long-term benefits, as long as we are able to shape their decision environment in ways that facilitate environmentally sustainable behaviors.

In their chapter on overcoming decision biases to reduce losses from natural catastrophes, **Howard Kunreuther**, **Robert Meyer**, and **Erwann Michel-Kerjan** describe the recent trend of escalating losses from natural hazards. They attribute this to an interplay of economic and behavioral factors: increased levels of assets placed in harm's way often without adequate investments in mitigation, along with a tendency to underattend to low-probability, high-consequence risks and to underappreciate the benefits of long-term investments in protection. The result is an accelerating spiral of risk taking, where the rate of economic development in high-risk areas outpaces investment in technologies intended to protect those developments. Kunreuther, Meyer, and Michel-Kerjan consider some of the behavioral drivers of this mismatch, and how taking these into account might help devise instruments (such as long-term insurance policies coupled with home improvement loans to induce investment in cost-effective mitigation measures) that can help reduce losses from future natural disasters.

Decision Contexts

The concluding three chapters explore several important features of contextual design—defaults, choice architecture more generally, and behaviorally informed regulation—all of which, it is argued, can aid in the implementation of improved policies. In "Decisions by Default," **Eric Johnson** and **Daniel Goldstein** draw on a variety of policy domains to illustrate the power of defaults and then explore some of the psychological mechanisms that underlie these effects. From insurance and organ-donation decisions to retirement savings and internet privacy settings, changing a no-action default can be highly effective compared to economic incentives or extensive educational or persuasion campaigns designed to influence people to make active decisions. Guided by the realization that each kind of default has costs and benefits and by considerations of ethics and effectiveness, Johnson and Goldstein discuss the importance to policy makers of understanding defaults and suggest conditions when different kinds of default arrangements—forced choice; mass defaults; random, smart, or personalized defaults—might be advisable.

In their chapter on choice architecture, **Richard Thaler**, **Cass Sunstein**, and **John Balz** consider decision makers, who—like all of us, if you believe the behavioral findings—function in an environment where many features, noticed and unnoticed, can influence

the decisions that they make. Those who shape the decision environment, in this case the policy makers, are the "choice architects." Thaler, Sunstein, and Balz analyze some of the tools that are available to choice architects, such as creating defaults, expecting errors, understanding mappings, giving feedback, structuring complex choices, and creating incentives. Their goal is to show how choice architecture can be used to help nudge people to make better choices (often as judged by themselves) without forcing the intended outcomes upon anyone, a philosophy they call libertarian paternalism.

Finally, looking at behaviorally informed regulation, **Michael Barr**, **Sendhil Mullainathan**, and **Eldar Shafir** propose a regulatory framework based on insights from behavioral economics and industrial organization in which outcomes are an equilibrium interaction between individuals with specific psychologies and firms that respond to those psychologies within specific market contexts (in contrast to the classic model, which assumes an interaction between rational choice and market competition). The introduction of a richer psychology, Barr, Mullainathan, and Shafir propose, complicates the impact of competition. It suggests that firms compete based on how consumers respond, and competitive outcomes may not always align with increased consumer welfare. Regulation must then address failures in this equilibrium. For example, in some contexts market participants will seek to overcome common human failings (as for example, with undersaving), whereas in other contexts market participants will seek to exploit them (as with overborrowing). Barr et al. discuss specific applications and illustrate, among other things, how a behaviorally informed regulatory analysis could improve policy makers' understanding of the costs and benefits of specific policies.

Commentaries

The volume concludes with a series of commentaries from scholars in four disciplines—philosophy, economics, medicine, and law. These scholars' main lines of research lie outside the behavioral arena, but they all have had a longstanding interest in behavioral applications and took it upon themselves to comment on issues raised in this volume, particularly as they interact with their own disciplinary ways of thinking. **William Congdon** considers some of the ways in which the behavioral perspective can inform economic policy; **Donald Redelmeier** looks at the ways in which behavioral insights might inform health care policy; **Paul Brest** focuses his attention on issues surrounding the potential debiasing of policy makers and lawmakers; and **Judith Lichtenberg** aims a philosophical lens at issues of paternalism, manipulation, and the extent to which behaviorally informed policy making may be good for people.

In the chapters that follow, more than fifty scholars will tell you about a rich body of research conducted over the past three to four decades that has changed the way we understand people. They will consider several implications of the research findings, and they will suggest many ways in which our new understanding, this new view of the human agent, might help design and implement better public policy. We hope that you find this exposition of the behavioral foundations of policy productive and illuminating and that you will use it to create new policies that further improve human welfare.