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**Nudges.gov:
Behavioral Economics and Regulation**

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INTRODUCTION

In recent decades, cognitive psychologists and behavioral economists have been incorporating empirical findings about human behavior into economic models. Those findings have transformed our understanding of regulation and its likely consequences. They are also providing instructive lessons about the appropriate design of “nudges” -- low-cost, choice-preserving, behaviorally informed approaches to regulatory problems, including disclosure requirements, default rules, and simplification (Thaler & Sunstein, 2008).

The most general lesson is that *choice architecture*, understood as the background against which decisions are made, has major consequences for both decisions and outcomes. Small, inexpensive policy initiatives, making modest design changes, can have large and highly beneficial effects in areas that include health, energy, the environment, savings, and much more. The purpose of this chapter is to explore relevant evidence, to catalogue behaviorally informed practices and reforms, and to discuss some implications for regulatory policy.

I write in part on the basis of my experience as Administrator of the White House Office of Information and Regulatory Affairs, where I was privileged to serve between 2009 and 2012. In that period, a number of

* Felix Frankfurter Professor of Law, Harvard Law School. This chapter draws very heavily, and is largely based, on Cass R. Sunstein, *Empirically Informed Regulation*, 78 U. Chi. L. Rev. 1349 (2011), and readers interested in relevant details might consult that discussion. There are, however, some significant additions, revisions, and changes in emphasis. I am grateful to Cassie Chambers for excellent research assistance.

people in the Obama Administration took the findings of behavioral economics quite seriously. We adopted a large number of initiatives that count as nudges. One of my main goals here is to catalogue those initiatives and to explore their implications for the future.

In the United States, regulatory efforts have been directly informed by behavioral findings, and behavioral economics has played an unmistakable role in numerous domains. The relevant initiatives enlist tools such as disclosure, warnings, norms, and default rules, and they can be found in multiple areas, including fuel economy, energy efficiency, environmental protection, health care, and obesity. As a result, behavioral findings have become an important reference point for regulatory and other policymaking in the United States.

In the United Kingdom, Prime Minister Cameron has created a Behavioural Insights Team with the specific goal of incorporating an understanding of human behavior into policy initiatives. The official website states that its “work draws on insights from the growing body of academic research in the fields of behavioural economics and psychology which show how often subtle changes to the way in which decisions are framed can have big impacts on how people respond to them.” (Cabinet Office, n.d.) The Team has used these insights to promote initiatives in numerous areas, including smoking cessation, energy efficiency, organ donation, consumer protection, and compliance strategies in general. A great deal of money is being saved. Other nations have expressed keen interest in the work of the Team, and its operations are expanding.

Behavioral economics has drawn attention in Europe more broadly. The Organisation for Economic Development and Cooperation (OECD) has published a Consumer Policy Toolkit that recommends a number of initiatives rooted in behavioral findings (OECD, 2010). In the European Union, the Directorate-General for Health and Consumers has also shown the influence of behavioral economics (DG SANCO, 2010). A report from the European Commission, called *Green Behavior*, enlists behavioral economics to outline policy initiatives to protect the environment (European Commission, 2012; inudgeyou.com, n.d.). Private organizations are making creative use of behavioral insights to promote a variety of environmental, health-related, and other goals (see inudgeyou.com, n.d.; see also greeNudge.no).

It is clear that behavioral findings are having a large impact on regulation, law, and public policy all over the world, and with increasing global interest in low-cost regulatory tools, that impact will inevitably grow over the next decades. In these circumstances, it is particularly important to

have a sense of what we know, what we do not know, and how emerging understandings can inform sensible policies and reforms.

I. WHAT WE KNOW

A. Findings

For purposes of regulation, the central findings of behavioral research fall in four categories. What follows is not meant to be a comprehensive account; the focus is on those findings that have particular importance to regulatory policy.

1. Inertia and procrastination.

a) Default rules often have a large effect on social outcomes. Both private and public institutions often establish “default rules”—rules that determine the result if people make no affirmative choice at all. In part because of the power of inertia, default rules can be extremely important. In the domain of retirement savings, for example, the default rule has significant consequences. When people are asked whether they want to opt in to a retirement plan, the level of participation is far lower than if they are asked whether they want to opt out. Automatic enrollment significantly increases participation.

More generally, people may decline to change from the status quo even if the costs of change are low and the benefits substantial. In the context of energy and the environment, for example, we might predict that people might neglect to switch to fuel-efficient alternatives even when it is in their interest to do so. It follows that complexity can have serious adverse effects, by increasing the power of inertia, and that ease and simplification (including reduction of paperwork burdens) can produce significant benefits. These benefits include increased compliance with law and greater participation in public programs. Often people do not act in advisable ways, not because they do not want to do so, but because the best path is obscure or difficult to navigate.

b) Procrastination can have significant adverse effects. According to standard economic theory, people will consider both the short term and the long term. They will take account of relevant uncertainties; the future may be unpredictable, and significant changes may occur over time. They will appropriately discount the future; it may be better to have money, or a good event, a week from now than a decade from now. In practice, however, some people procrastinate or neglect to take steps that impose small short-

term costs but that would produce large long-term gains. They may, for example, delay enrolling in a retirement plan, starting to exercise, ceasing to smoke, or using some valuable, cost-saving technology.

When procrastination is creating significant problems, automatic enrollment in relevant programs might be helpful. Moreover, complex requirements, inconvenience, and lengthy forms are likely to make the situation worse and perhaps unexpectedly so.

c) When people are informed of the benefits or risks of engaging in certain actions, they are far more likely to act in accordance with that information if they are simultaneously provided with clear, explicit information about how to do so (Leventhal, Singer, & Jones, 1965; Nickerson & Rogers, 2010). For example, those who are informed of the benefits of a vaccine are more likely to become vaccinated if they are also given specific plans and maps describing where to go (Leventhal, Singer, & Jones, 1965). Similarly, behavior has been shown to be significantly affected if people are informed, not abstractly of the value of “healthy eating,” but specifically of the advantages of buying 1 percent milk (as opposed to whole milk) (Heath & Heath, 2010). In many domains, the identification of a specific, clear, unambiguous path or plan has an important effect on social outcomes; complexity or vagueness can ensure inaction, even when people are informed about risks and potential improvements. What appears to be skepticism or recalcitrance may actually be a product of ambiguity.

2. Framing and presentation.

a) People are influenced by how information is presented or “framed.” (Levin, Schneider, & Gaeth, 1998). If, for example, people are informed that they will gain a certain amount of money by using energy efficient products, they may be less likely to change their behavior than if they are told that they will lose the same amount of money by not using such products. When patients are told that 90 percent of those who have a certain operation are alive after five years, they are more likely to elect to have the operation than when they are told that after five years, 10 percent of patients are dead (Redelmeier, Rozin, & Kahneman, 1993). It follows that a product that is labeled “90 percent fat-free” may well be more appealing than one that is labeled “10 percent fat.” It also follows that choices are often not made based solely on their consequences; assessments may be affected by the relevant frame.

b) Information that is vivid and salient usually has a larger impact on behavior than information that is statistical and abstract. With respect to

public health, vivid displays can be more effective than abstract presentations of statistical risks. This point bears on the design of effective warnings. Attention is a scarce resource, and vivid, salient, and novel presentations may trigger attention in ways that abstract or familiar ones cannot.

In particular, salience greatly matters. Why, for example, do people pay bank overdraft fees? One of the many possible answers is that such fees are not sufficiently salient to people, and the fees are incurred as a result of inattention or inadvertent mistakes. One study suggests that limited attention is indeed a source of the problem, and that once overdraft fees become salient, they are significantly reduced (Stango & Zinman, 2011). When people take surveys about such fees, they are less likely to incur a fee in the following month, and when they take a number of surveys, the issue becomes sufficiently salient that overdraft fees are reduced for as much as two years. In many areas, the mere act of being surveyed can affect behavior by, for example, increasing use of water treatment products (thus promoting health) and the take-up of health insurance; one reason is that being surveyed increases the salience of the action in question (Zwane et al., 2011).

A more general point is that many costs (or benefits) are less salient than purchase prices; they are “shrouded attributes” to which some consumers do not pay much attention. Such “add-on” costs may matter a great deal but receive little consideration, because they are not salient.

c) People display loss aversion; they may well dislike losses more than they like corresponding gains (Thaler, Kahneman, & Knetsch, 1991; McGraw, Larsen, Kahneman, & Schkade, 2010; Card & Dahl, 2011). Whether a change counts as a loss or a gain depends on the reference point, which can be affected by mere description or by policy decisions, and which is often the status quo. A small tax – for example, on grocery bags – can have a large effect on behavior, even if a promised bonus has no effect at all; one reason is loss aversion. It follows that very small charges or fees can be a surprisingly effective policy tool. In part as a result of loss aversion, the initial allocation of a legal entitlement can affect people’s valuations. Those who have the initial allocation may value a good more than they would if the allocation were originally elsewhere, thus showing an endowment effect.

3. Social influences.

a) In multiple domains, individual behavior is greatly influenced by the perceived behavior of other people (Hirshleifer, 1995; Saez, 2003).

With respect to obesity, proper exercise, alcohol consumption, smoking, becoming vaccinated, and much more, the perceived decisions of others have a significant influence on individual behavior and choice. The behavior of peers has been found to have a significant effect on risky behavior among adolescents, including tobacco smoking, marijuana use, and truancy (Card & Guiliano, 2011; [Bisin, Moro, & Topa, 2011](#)).

In particular, food consumption is greatly affected by the food consumption of others, and indeed the body type of others in the relevant group can affect people's responses to their food choices, with a greater effect from those who are thin than those who are heavy (McFerran et al., 2011). Perception of the norm in the pertinent community can affect risk taking, safety, and health. The norm conveys significant information about what ought to be done; for that reason, those who lack private information may follow the apparent beliefs and behavior of relevant others, sometimes creating informational cascades.

In addition, people care about their reputations, and for that reason, they may be influenced by others so as not to incur their disapproval. In some contexts, social norms can help create a phenomenon of compliance without enforcement—as, for example, when people comply with laws forbidding indoor smoking or requiring buckling of seat belts, in part because of social norms or the expressive function of those laws. These points bear on the value and importance, in many domains, of private–public partnerships.

b) In part because of social influences, people are more likely to cooperate with one another, and to contribute to the solution of collective action problems, than standard economic theory predicts ([Camerer, 2003](#)). People's willingness to cooperate is partly a product of an independent commitment to fairness; but it is partly a product of a belief that others will see and punish a failure to cooperate or to act fairly. Norms of reciprocity can be exceedingly important. In many contexts, the result is a situation in which people cooperate on the assumption that others are cooperating as well -- and might punish those who fail to do so.

4. Difficulties in assessing probability.

a) In many domains, people show unrealistic optimism ([Jolls, 1998](#); [Sharot, 2011](#)). The “above average” effect is common ([Weinstein, 1987](#)); many people believe that they are less likely than others to suffer from various misfortunes, including automobile accidents and adverse health outcomes. One study found that while smokers do not underestimate statistical risks faced by the population of smokers, they nonetheless

believe that their personal risk is less than that of the average smoker (Slovic, 1998). Unrealistic optimism has neurological foundations, with people incorporating good news far more readily than bad news (see Sunstein, 2013, for an overview). A predictable result of unrealistic optimism is a failure to take appropriate precautions.

b) People often use heuristics, or mental shortcuts, when assessing risks (Kahneman & Frederick, 2002). For example, judgments about probability are often affected by whether a recent event comes readily to mind (Tversky & Kahneman, 1973). If an event is cognitively “available,” people may well overestimate the risk. If an event is not cognitively available, people might well underestimate the risk. In short, “availability bias” can lead to inaccurate judgments about the probability of undesirable outcomes.

c) People sometimes do not make judgments on the basis of expected value, and they may neglect or disregard the issue of probability, especially when strong emotions are triggered (Lowenstein, 2001). When emotions are strongly felt, people may focus on the outcome and not on the probability that it will occur (Rottenstreich & Hsee, 2001). (This point obviously bears on reactions to extreme events of various sorts.) Prospect theory, which does not depend on emotions at all, suggests that for low and moderate changes, people may be risk averse with respect to gains but risk seeking with respect to losses; for very large changes, people may be risk seeking with respect to gains but risk averse for losses (Kahneman & Tversky, 1979).

B. Incentives and Choice Architecture

These various findings are hardly inconsistent with the conventional economic emphasis on the importance of material incentives; actual and perceived costs and benefits certainly matter. When the price of a product rises, or when it becomes clear that use of a product imposes serious health risks, the demand for the product is likely to fall (at least, and this is a significant qualification, if these effects are salient). But apart from strictly material incentives of this kind, evidence suggests the independent importance of (1) the social environment and (2) prevailing social norms. If, for example, healthy foods are prominent and easily accessible, people are more likely to choose them; one study finds an 8 to 16 percent decrease in intake simply by making food more difficult to reach (as, for example, by varying its proximity by ten inches or altering the serving utensil) (Rozin et al., 2011). The problem of childhood obesity is, at least in part, a result of

the easy availability of unhealthy foods. The same point bears on smoking and alcohol abuse.

In fact small nudges can have surprisingly large effects. For example, automatic enrollment in savings programs can have far larger effects than significant economic incentives – a clear testimonial to the potential power of choice architecture and its occasionally larger effect than standard economic tools ([Chetty et al., 2012](#)). Some evidence suggests that if people are asked to sign forms first rather than last – an especially minor change – the incidence of honesty increases significantly ([Shu et al., 2012](#)).

Here is another way to put the point. The existing social environment and current social norms provide the backdrop for many outcomes. Consumer products are accompanied by default rules of various sorts; consider, for example, rental car and cell phone agreements, where it is possible to opt in or to opt out of a range of features, and where the default rule may much matter. With respect to water quality, air quality, sewage treatment, immunization, and health care, the social environment provides relevant background, which is often taken for granted, and which need not, for many people much of the time, become a serious source of deliberation and choice. In particular for people who are well-off, the relevant background, which need not be an object of reflection, is highly desirable and may be taken for granted without causing harm. For others, the background is not so benign, and it should in any case be an object of reflection and choice.

C. Concerns

1. Are predictions possible?

It is tempting to respond that these diverse findings might point in different directions, even for the same subpopulation faced with the same problem, and hence that clear predictions cannot be made in particular cases. For example, will people save too little or too much? Will they take optimal, excessive, or insufficient precautions against the risks associated with poor diet?

By itself and in the abstract, an understanding of loss aversion, the availability heuristic, and social influences does not produce clear answers. Such an understanding could, on plausible assumptions, suggest that people may save too much or take excessive precautions, or on other plausible assumptions, suggest the opposite conclusions. And it may well be the case that loss aversion, unrealistic optimism, the availability heuristic, and social influences are simultaneously at work and will point in different directions,

making predictions difficult or impossible. For example, unrealistic optimism may lead people to underestimate certain risks, while the availability heuristic may lead people to overestimate the same risks. And although procrastination will cause delay, loss aversion may lead people to act promptly.

It is true that if these findings are taken as a whole and in the abstract, they will not lead to a clear or unique prediction about behavior. Particular situations must be investigated in detail in order to understand likely outcomes. Predictions cannot and should not be made in the abstract. For the purposes of this chapter, it is not necessary to engage these questions in detail. We know that automatic enrollment usually has a large effect, and we know when it does not (Sunstein, 2013; see also Chetty et al., 2012). Low-cost regulatory policies, such as disclosure and simplification, may be justified even if we do not have a clear understanding, in the abstract, of whether relevant behavior is affected by loss aversion or social influences. Of course it is also true that the design of a disclosure policy should be based on an understanding of how people process information, and that a sensible approach to simplification will require an understanding of whether and why complexity can create problems and of what kinds of simplification can eliminate those problems.

2. Markets, government, and the vexing problem of paternalism.

It is natural to wonder whether an understanding of the findings outlined above justify paternalism, or operate as a defense of “more” regulation. With respect to paternalism in particular, it is true that some of the relevant findings supplement the standard accounts of market failures, suggesting that in some settings, markets may fail, in the sense that they may not promote social welfare even in the presence of perfect competition and full information. We are now in a position to identify a series of *behavioral market failures*, and these do appear to justify regulatory controls. Responses to behavioral market failures might be counted as paternalistic.

If, for example, people focus on short-term costs and neglect long-term benefits, it is possible that disclosure policies that specifically emphasize the long-term, or even regulatory requirements (involving, for example, energy efficiency), may be justified. It is also possible to identify “internalities”—problems of self-control and errors in judgments that produce within-person harms, as, for example, when smoking behavior leads to serious risks because of the victory of short-term considerations

over the longer view. These too count as behavioral market failures, and responses may be paternalistic in character.

Richard Thaler and I have argued in defense of “libertarian paternalism” (Thaler and Sunstein, 2008; see also Sunstein, 2013), understood as approaches that preserve freedom of choice while also steering people in directions that will make their lives go better (by their own lights). And it would be possible to think that at least some behavioral market failures justify more coercive forms of paternalism.

But even if the standard accounts of potential market failures are supplemented, it does not necessarily follow that paternalism, or more regulation, is justified. Perhaps markets will eventually address the problem better than regulators would, and for multiple reasons, the cure might be worse than the disease.

Indeed, some of the findings might argue in favor of less rather than more regulation and less rather than more paternalism. When, for example, people are able to solve collective action problems on their own, government is not needed. In certain circumstances, automatic enrollment is preferable to mandates and bans. Moreover, market forces can provide a great deal of help in the face of human error. For example, the private sector has relied increasingly on automatic enrollment in savings plans, and countless companies attempt to promote better diet and more exercise (perhaps expecting to obtain more customers as a result).

It should not be necessary to emphasize that public officials are subject to error as well. Indeed, errors may result from one or more of the findings traced above; officials are human and capable of error too. The dynamics of the political process may or may not lead in the right direction. It would be absurd to say that behaviorally informed regulation is more aggressive than regulation that is not so informed, or that an understanding of recent empirical findings calls for more regulation rather than less. The argument is instead that such an understanding can help to inform the design of regulatory programs.

With respect to the particular concerns, it would be valuable to have a better understanding of how the relevant findings apply within heterogeneous groups; the findings are far from uniform within the population, and for purposes of policy, heterogeneity may matter. It would also be valuable to have a better understanding of actual conduct within diverse settings—for example, the decision whether or not to purchase fuel-efficient cars and appliances in the face of short-term costs and long-term benefits. We have good reason to believe that many people do not buy energy-efficient products even when it would be in their economic interest

to do so, but the conceptual and empirical issues are complex and have not been fully sorted out.

But even at this stage, existing research offers helpful lessons for regulatory policy. Relevant research suggests that four such approaches have particular promise: (1) using disclosure as a regulatory tool, especially if disclosure policies are designed with an appreciation of how people process information; (2) simplifying and easing choices through appropriate default rules, reduction of complexity and paperwork requirements, and related strategies; (3) increasing the salience of certain factors or variables; and (4) promoting social norms through private–public partnerships and other approaches that operate in the service of agreed-upon public goals. Behaviorally informed approaches of this kind are already in place, including a number of recent initiatives.

II. DISCLOSURE AS A NUDGE

In this section, I explore the uses of disclosure as a behaviorally informed regulatory tool. It is important to distinguish between summary disclosure, often provided at the point of purchase, and full disclosure, typically provided on the Internet. A central point is that disclosure policies should be based on an understanding of how people actually process information. On this count, behavioral findings are essential.

A. Actually Informing Choice

1. Examples.

Many statutory programs recognize that information disclosure can be a useful regulatory tool, replacing or complementing other approaches. Central examples include legislative efforts to require disclosure of the risks associated with smoking, of potential savings from energy efficiency, and of information that bears on health. Recent initiatives have drawn directly from behavioral economics, emphasizing the importance of plain language, clarity, and simplicity.

a) Credit cards. The Credit Card Accountability, Responsibility, and Disclosure Act of 2009 (Credit CARD Act, 2009) is designed in large part to ensure that credit card users are adequately informed. Specifically, the Act prohibits an increase in annual percentage rates (APR) without forty-five days notice, prohibits the retroactive application of rate increases to existing balances, and also requires clear notice of the consumer’s right to cancel the credit card when the APR is raised.

The Act also requires a number of electronic disclosures of credit card agreements. Specifically, it requires that (1) “[e]ach creditor shall establish and maintain an Internet site on which the creditor shall post the written agreement between the creditor and the consumer for each credit card account under an open-end consumer credit plan”; (2) “[e]ach creditor shall provide to the Board, in electronic format, the consumer credit card agreements that it publishes on its Internet site”; and (3) the “Board shall establish and maintain on its publicly available Internet site a central repository of the consumer credit card agreements received from creditors pursuant to this subsection, and such agreements shall be easily accessible and retrievable by the public.” (Credit CARD Act, 2009).

b) Nutrition. In the domain of nutrition, a number of disclosure requirements are in place. To take just one example, a final rule has been issued by the US Department of Agriculture (USDA), requiring provision of nutritional information to consumers with respect to meat and poultry products. Nutrition facts panels must be provided on the labels of such products. Under the rule, the panels must contain information with respect to calories and both total and saturated fats (9 CFR § 317.309).

The rule clearly recognizes the potential importance of framing. If a product lists a percentage statement such as “80% lean,” it must also list its fat percentage. This requirement should avoid the confusion that can result from selective framing; a statement that a product is 80 percent lean, standing by itself, makes leanness salient, and may therefore be misleading.

c) Health care. The Patient Protection and Affordable Care Act of 2010 (Affordable Care Act) contains a large number of disclosure requirements designed to promote accountability and informed choice with respect to health care. Indeed, the Affordable Care Act is, in significant part, a series of disclosure requirements, many of which are meant to inform consumers, and to do so in a way that is alert to behavioral findings. Under the Act, a restaurant that is part of a chain with twenty or more locations doing business under the same name is required to disclose calories on the menu board. Such restaurants are also required to provide in a written form (available to customers upon request) additional nutrition information pertaining to total calories and calories from fat, as well as amounts of fat, saturated fat, cholesterol, sodium, total carbohydrates, complex carbohydrates, sugars, dietary fiber, and protein (Affordable Care Act, 2010).

In a similar vein, § 1103 of the Act calls for “[i]mmediate information that allows consumers to identify affordable coverage options.” It requires the establishment of an internet portal for beneficiaries to easily access

affordable and comprehensive coverage options, including information about eligibility, availability, premium rates, cost sharing, and the percentage of total premium revenues spent on health care, rather than administrative expenses.

It should be clear from this brief survey that the range of recent disclosure requirements is very wide. Such approaches have considerable promise.

2. How, not only whether.

As social scientists have emphasized, disclosure as such may not be enough; regulators should devote care and attention to how, not only whether, disclosure occurs. Clarity and simplicity are often critical. In some cases, accurate disclosure of information may be ineffective if the information is too abstract, vague, detailed, complex, poorly framed, or overwhelming to be useful. Disclosure requirements should be designed for homo sapiens, not homo economicus (the agent in economics textbooks). In addition, emphasis on certain variables may attract undue attention and prove to be misleading. If disclosure requirements are to be helpful, they must be designed to be sensitive to how people actually process information.

A good rule of thumb is that disclosure should be concrete, straightforward, simple, meaningful, timely, and salient. If the goal is to inform people about how to avoid risks or to obtain benefits, disclosure should avoid abstract statements (such as, for example, of “healthy eating” or “good diet”) and instead clearly identify the steps that might be taken to obtain the relevant goal (by specifying, for example, what specific actions parents might take to reduce the risk of childhood obesity).

In 2010, Department of Health and Human Services (HHS) emphasized the importance of clarity and salience in connection with its interim final rule entitled “Health Care Reform Insurance Web Portal Requirements,” which “adopts the categories of information that will be collected and displayed as Web portal content, and the data we will require from issuers and request from States, associations, and high risk pools in order to create this content.” (Department of Health and Human Services, 2010). The preamble to the interim final rule is behaviorally informed in the sense that it is directly responsive to how people process information:

In implementing these requirements, we seek to develop a Web site (hereinafter called the Web portal) that would empower consumers by increasing informed choice and promoting market competition. To

achieve these ends, we intend to provide a Web portal that provides information to consumers in a clear, salient, and easily navigated manner. We plan to minimize the use of technical language, jargon, or excessive complexity in order to promote the ability of consumers to understand the information and act in accordance with what they have learned. . . . [W]e plan to provide information, consistent with applicable laws, in a format that is accessible for use by members of the public, allowing them to download and repackage the information, promoting innovation and the goal of consumer choice.

That web portal can be found at <http://www.healthcare.gov/>.

3. Testing disclosure.

To the extent possible, agencies should study in advance the actual effects of alternative disclosure designs to ensure that information is properly presented and will actually inform consumers. The “Nutrition Facts” labels on many food products followed such a process of advance study, with careful investigation of consumer responses to different presentations of the relevant material. Actual experience can, of course, provide valuable information.

Because they are more likely to yield information about actual behavior, experimental or quasi-experimental studies are preferred to focus groups; randomized experiments have particular advantages. At the same time, focus groups can also be useful, especially if they are carefully designed to assess likely behavior (rather than simply asking people which presentations or formats they most like).

4. Behavioral economics, cognitive illusions, and avoiding confusion.

If not carefully designed, disclosure requirements can produce ineffective, confusing, and potentially misleading messages. Behaviorally informed approaches are alert to this risk and suggest possible improvements.

For instance, automobile manufacturers are currently required to disclose the fuel economy of new vehicles as measured by miles per gallon (MPG). This disclosure is useful for consumers and helps to promote informed choice. As the Environmental Protection Agency (EPA) has emphasized, however, MPG is a nonlinear measure of fuel consumption (Environmental Protection Agency, 2009a). For a fixed travel distance, a change from 20 to 25 MPG produces a larger reduction in fuel costs than

does a change from 30 to 35 MPG, or even from 30 to 38 MPG. To see the point more dramatically, consider the fact that an increase from 10 to 20 MPG produces more savings than an increase from 20 to 40 MPG, and an increase from 10 to 11 MPG produces savings almost as high as an increase from 34 to 50 MPG.

Evidence suggests that many consumers do not understand this point and tend to interpret MPG as linear with fuel costs. When it occurs, this error is likely to produce inadequately informed purchasing decisions when people are making comparative judgments about fuel costs. For example, people may well underestimate the benefits of trading a low MPG car for one that is even slightly more fuel efficient. By contrast, an alternative fuel economy metric, such as gallons per mile, could be far less confusing. Such a measure is linear with fuel costs and hence suggests a possible way to help consumers make better choices.

A closely related finding is that because of the MPG illusion, consumers tend to underestimate the cost differences between low-MPG vehicles and tend to overestimate the cost differences between high-MPG vehicles (Allcott, 2011). Recognizing the imperfections and potentially misleading nature of the MPG measure, the Department of Transportation and EPA proposed in 2010 two alternative labels that are meant to provide consumers with clearer and more accurate information about the effects of fuel economy on fuel expenses and on the environment (Environmental Protection Agency, 2009a).

After a period of public comment, the Department of Transportation and EPA ultimately chose a label that borrows from both proposals (see Figure 3) (Environmental Protection Agency, 2009a). This approach calls for disclosure of the factual material included in the first option but adds a clear statement about anticipated fuel savings (or costs) over a five-year period. The statement of fuel savings (or costs) should simultaneously help counteract the MPG illusion and inform consumers of the economic effects of fuel economy over a relevant time period (Environmental Protection Agency, 2009a). At the same time, the chosen approach does not include the letter grades, on the ground (among others) that it might be taken to suggest a governmental evaluation of the overall merits of the car.

In a related vein, the USDA has abandoned the “Food Pyramid,” used for decades as the central icon to promote healthy eating. The Pyramid has long been criticized as insufficiently informative; it does not offer people with any kind of clear “path” with respect to healthy diet. According to one critical account, “its meaning is almost completely opaque. . . . To learn what the Food Pyramid has to say about food, you must be willing to

decipher the Pyramid's markings. . . . The language and concepts here are so hopelessly abstracted from people's actual experience with food . . . that the message confuses and demoralizes" (Heath & Heath, 2010). In response to these objections, and after an extended period of deliberation, the USDA replaced the Pyramid with a new, simpler icon, consisting of a plate with clear markings for fruit, vegetable, grains, and protein.

The plate is accompanied by straightforward guidance, including "make half your plate fruits and vegetables," "drink water instead of sugary drinks," and "switch to fat-free or low-fat (1%) milk." This approach has the key advantage of informing people what to do, if they seek to have a healthier diet.

In a related vein, the HHS, implementing a provision of the Affordable Care Act, has finalized a rule to require insurance companies to provide clear, plain language summaries of relevant information to prospective customers. The rule includes basic information, including the annual premium, the annual deductible, a statement of services that are not covered, and a statement of costs for going to an out-of-network provider (Id; Healthcare.gov, 2011).

In some circumstances, the tendency toward unrealistic optimism may lead some consumers to downplay or neglect information about statistical risks associated with a product or an activity. Possible examples include smoking and distracted driving. In such circumstances, disclosure might be designed to make the risks associated with the product less abstract, more vivid, and salient. For example, the Family Smoking Prevention and Tobacco Control Act of 2009¹ (Smoking Prevention Act) requires graphic warnings with respect to the risks of smoking tobacco, and the Food and Drug Administration (FDA) has finalized such warnings for public comment, with vivid and even disturbing pictures of some of the adverse outcomes associated with smoking.

5. Behavioral economics and promoting competition.

If disclosure requirements are straightforward and simple, they should facilitate comparison shopping and hence market competition. Drawing on social science research, the Treasury Department's account of financial regulation emphasizes the value of requiring that "communications with the consumer are reasonable, not merely technically compliant and non-deceptive. Reasonableness includes balance in the presentation of risks and benefits, as well as clarity and conspicuousness in the description of significant product costs and risks." (Department of the Treasury, 2009b). The department's analysis goes on to say that one goal should be to

harness technology to make disclosures more dynamic and adaptable to the needs of the individual consumer. . . . Disclosures should show consumers the consequences of their financial decisions. . . . [The regulator] should [] mandate or encourage calculator disclosures for mortgages to assist with comparison shopping. For example, a calculator that shows the costs of a mortgage based on the consumer's expectations for how long she will stay in the home may reveal a more significant difference between two products than appears on standard paper disclosures (Department of the Treasury, 2009b).

In keeping with this theme, the Consumer Financial Protection Bureau is authorized to ensure that “consumers are provided with timely and understandable information to make responsible decisions about financial transactions.” (Dodd-Frank Act, 2010). The Bureau is also authorized to issue rules that ensure that information is “fully, accurately, and effectively disclosed to consumers in a manner that permits consumers to understand the costs, benefits, and risks associated with the product or service, in light of the facts and circumstances.” (Dodd-Frank Act, 2010).

To accomplish this task, the Bureau is authorized to issue model forms with “a clear and conspicuous disclosure that, at a minimum—(A) uses plain language comprehensible to consumers; (B) contains a clear format and design, such as an easily readable type font; and (C) succinctly explains the information that must be communicated to the consumer.” (Dodd-Frank Act, 2010; Riis & Ratner, 2011). In addition, the director of the Bureau is required to “establish a unit whose functions shall include researching, analyzing, and reporting on . . . consumer awareness, understanding, and use of disclosures and communications regarding consumer financial products or services” and “consumer behavior with respect to consumer financial products or services, including performance on mortgage loans.” Note that new technologies make it possible to inform consumers of their own choices and usages, an approach that may be especially important when firms have better information than consumers do about such choices and usages.

In the same general vein, the Department of Labor issued a final rule requiring disclosure to workers of relevant information in pension plans. The rule is designed to require clear, simple disclosure of information about fees and expenses and to allow meaningful comparisons, in part through the use of standard methodologies in the calculation and disclosure of expense and return information (29 CFR § 2550.404a-5).

Yet another example is provided by a final rule of the Department of Education that promotes transparency and consumer choice with respect to

for-profit education by requiring institutions to provide clear disclosure of costs, debt levels, graduation rates, and placement rates (Department of Education, 2010a). The rule states that relevant institutions must disclose, among other things, the occupations that the program prepares students to enter, the on-time graduation rate for students completing the program, the tuition and fees charged to students for completing the program within a normal time, the placement rate for students completing the program, and the median loan debt incurred by students who completed the program. These disclosures must be included “in promotional materials [the institution] makes available to prospective students” and be “[p]rominently provide[d] . . . in a simple and meaningful manner on the home page of its program Web site.” (34 CFR § 668.6); Department of Education, 2010b).

B. Behaviorally Informed Tools: Summary Disclosure and Full Disclosure

Disclosure requirements of this kind are designed to inform consumers at the point of purchase, often with brief summaries of relevant information. Such “summary disclosures” are often complemented with more robust information, typically found on public or private websites. For example, the EPA offers a great deal of material on fuel economy online, going well beyond the information that is available on stickers, and the nutrition facts label is supplemented by a great deal of nutritional information on government websites. Approaches of this kind provide information that private individuals and institutions can adapt, reassemble, and present in new, helpful, imaginative, and often unanticipated ways. Some of the most valuable and creative uses of full disclosure are made by the private sector.

Other disclosure requirements are not specifically directed to consumers or end users at all. They promote public understanding of existing problems and help produce possible solutions by informing people about current practices. One example is the Emergency Planning and Community Right-to-Know Act of 1986 (Emergency Planning Act, 1986). At first, this law seemed to be largely a bookkeeping measure, requiring a “Toxic Release Inventory” in which firms reported what pollutants they were using. But available evidence indicates that it has had beneficial effects, helping to spur reductions in toxic releases throughout the United States (Hamilton, 2005). One reason involves public accountability: public attention can help promote behavior that fits with statutory purposes.

In 2009 and 2010, the Occupational Safety and Health Administration (OSHA) placed a significant subset of its fatality, illness, and injury data online, in a step that should promote both accountability and safer

workplaces (Department of Labor, 2011). In 2009, the EPA issued a greenhouse gas reporting rule, requiring disclosure by many of the most significant emitters (Environmental Protection Agency, 2009b). The data may well allow businesses to find innovative ways to track their own emissions, to compare them to similar facilities, and eventually to identify low-cost reductions.

The Department of Justice (DOJ) has similarly published dozens of datasets involving crime, enforcement, and prison, (Department of Justice, 2012; Data.gov, n.d.) and is preparing many more for future release. Similarly, the Department of Labor's "Searchable Enforcement Database" provides the public with one-stop access to enforcement data across the department (for example, Mines and Chemical Hazards) (Department of Labor, n.d.). The EPA has taken a similar approach (Environmental Protection Agency, n.d.). Generalizing from these practices, President Obama has issued a memorandum requiring agencies "with broad regulatory compliance and administrative enforcement responsibilities" to "develop plans to make public information concerning their regulatory compliance and enforcement activities accessible, downloadable, and searchable online (Presidential Memorandum, 2011).

These steps fit well with the goals of the Office of Management and Budget's (OMB) "Open Government Directive," which is intended in part to ensure that high-value data sets are placed online (Orszag, 2009). Posting these data sets online can promote regulatory goals by virtue of the power of publicity. Indeed, many high-value data sets count as such because their publication helps agencies further their statutory missions. The directive explicitly emphasizes this point (Orszag, 2009), and numerous agencies have disclosed high-value data sets (Department of Health and Human Services, 2010a; Department of the Treasury, 2009a; Department of Housing and Urban Development, n.d.; Department of Energy, n.d.) and developed open government plans (Environmental Protection Agency, 2010; Department of Transportation, 2010; Department of Health and Human Services, 2010b; Department of Labor, 2010; Asamoah & Sharfstein, 2010). Disclosure of many of the data sets (for example, in the domain of safety and health) should promote agency missions; the open government plans enlist openness for the same reason.

Disclosure is also used as a check on certain increases in health insurance premiums. For plan years beginning in 2010, Affordable Care Act § 1004 requires that the secretary and states establish a process for the annual review of "unreasonable increases" in premiums for health insurance coverage (Affordable Care Act, 2010). That process shall

“require health insurance issuers to submit to the Secretary and the relevant State a justification for an unreasonable premium increase prior to the implementation of the increase.” (Affordable Care Act, 2010) Moreover, “such issuers shall prominently post such information on their Internet websites,” and the “Secretary shall ensure the public disclosure of information on such increases and justifications for all health insurance issuers.” (Affordable Care Act, 2010b).

In addition to making data more accessible, some agencies are attempting to make the data more readily usable. An example of this kind of clean, clear, and flexible transparency technology is eXtensible Business Reporting Language (XBRL)(XBRL, n.d.). XBRL is an open standard for creating electronic reports and exchanging data via the web. Using a standardized series of “tags” for labeling information, XBRL essentially allows anyone to download and analyze huge amounts of data using a simple spreadsheet. By June of this year, companies with a market capitalization over \$5 billion that use US accounting rules will need to submit all filings via the XBRL format, according to a recently announced Securities and Exchange Commission (SEC) rule, entitled “Interactive Data to Improve Financial Reporting,” which requires

companies to provide financial statement information in a form that is intended to improve its usefulness to investors. In this format, financial statement information could be downloaded directly into spreadsheets, analyzed in a variety of ways using commercial off-the-shelf software, and used within investment models in other software formats. . . . The new rules are intended not only to make financial information easier for investors to analyze, but also to assist in automating regulatory filings and business information processing. Interactive data has the potential to increase the speed, accuracy and usability of financial disclosure, and eventually reduce costs (Securities and Exchange Commission, 2009).

The requirement will be phased in over three years for smaller public companies and mutual funds.

To be sure, mandatory disclosure can impose costs and burdens on both private and public institutions, and to the extent permitted by law, those costs and burdens should be considered when deciding whether and how to proceed. Empirical evidence on the actual effects of disclosure policies is indispensable ([Greenstone, 2009](#); Schwartz et al., 2011; Sunstein, 2010a).

III. DEFAULT RULES AND SIMPLIFICATION AS NUDGES

Social science research provides strong evidence that starting points, or “default rules,” greatly affect social outcomes (Johnston, 1993). In some contexts, it may be possible to promote statutory goals with sensible default rules that preserve freedom of choice and that might help to avoid the rigidity, cost, and unintended adverse consequences of mandates and bans.

Default rules are one way of easing people’s choices, and they are used in countless domains by both public and private institutions. There are other ways of easing choices. One example is simplification, as with communications and forms that are shorter, easier, more intuitive, electronic, and in some cases prepopulated with information, thus reducing burdens on those who are asked to fill them out.

A. Automatic Enrollment and Default Rules: Examples

1. Savings.

In the United States, employers have long asked workers whether they want to enroll in 401(k) plans; under a common approach, the default rule is nonenrollment. Even when enrollment is easy, the number of employees who enroll, or opt in, has sometimes been relatively low (Mardian & Shea, 2001; Gale et al., 2009). Recently, a number of employers have responded by changing the default to automatic enrollment, by which employees are enrolled unless they opt out. The results are clear: significantly more employees end up enrolled with an opt-out design than with opt-in (Gale et al., 2009). This is so even when opting out is easy. Importantly, automatic enrollment has significant benefits for all groups, with increased anticipated savings for Hispanics, African Americans, and women in particular (Orszag & Rodriguez, 2009; Papke, Walker, & Dworsky, 2009; Chiteji & Walker, 2009).

The Pension Protection Act of 2006 (PPA)(Pension Protection Act, 2006) draws directly on these findings by encouraging employers to adopt automatic enrollment plans. The PPA does this by providing nondiscrimination safe harbors for elective deferrals and for matching contributions under plans that include an automatic enrollment feature, as well as by providing protections from state payroll-withholding laws to allow for automatic enrollment. Building on these efforts, President Obama has asked the IRS and the Treasury Department to undertake initiatives to make it easier for employers to adopt such plans (Obama, 2009; Internal Revenue Service, 2009).

2. Health care.

A provision of the Affordable Care Act requires employers with over two hundred employees automatically to enroll employees in health care plans, while also allowing employees to opt out (Affordable Care Act, 2010). Another provision of the Act is called the Community Living Assistance Services and Supports Act (CLASS Act) (CLASS Act, 2010); this provision creates a national voluntary long-term insurance program. The Act provides for an automatic enrollment system, whereby employers enroll employees in the program unless they opt out (CLASS Act, 2010). In addition, contains an automatic payroll deduction system for the payment of premiums (CLASS Act, 2010).

On February 4, 2010, the Center of Medicare and Medicaid Services (CMS) provided guidance to states via a State Health Official (SHO) letter (Centers for Medicare and Medicaid Services, 2010). In cases where states are able to obtain all the information necessary to determine eligibility, the new option permits States automatically to enroll and renew eligible children in Medicaid or Children’s Health Insurance Program (CHIP). This approach allows states to initiate and determine eligibility for Medicaid or CHIP without a signed Medicaid or CHIP program application, as long as the family or child consents to be enrolled in Medicaid or CHIP.

3. School meals.

The National School Lunch Act (Healthy Hunger-Free Kids Act, 2012) takes steps to allow “direct certification” of eligibility, thus reducing complexity and introducing what is a form of automatic enrollment. Under the program, children who are eligible for benefits under certain programs will be “directly eligible” for free lunches and free breakfasts, and hence will not have to fill out additional applications (Healthy, Hunger-Free Kids Act, 2012). To promote direct certification, the USDA has issued an interim final rule that is expected to provide up to 270,000 children with school meals (Department of Agriculture, 2011).

4. Payroll statements.

The Department of Homeland Security has changed the default setting for payroll statements to electronic from paper, thus reducing costs (Orszag, 2010). In general, changes of this kind may save significant sums of money for both private and public sectors. It would be useful to identify other contexts in which sensible default rules—or automatic or simplified enrollment—might operate in the service of legal requirements and agreed-

upon social goals. Of course it is possible to imagine default rules, or approaches to automatic enrollment, that are harmful or counterproductive; this risk is discussed below.

5. Childhood obesity.

A great deal of empirical work identifies a noteworthy contributor to the problem of obesity, including childhood obesity. If healthy foods are easily accessible, people are far more likely to choose them, and the same is true for unhealthy foods. Indeed, convenience and accessibility can significantly increase caloric intake (Rozin et al., 2011; Wansink, Just, & McKendry, 2010) some studies have found that when fast food restaurants are located near schools or residences, significant weight gain occurs in both children and pregnant women (Currie et al., 2010). Even small differences have large effects on food choices and consumption. For example, the sizes of plates and portions have been increasing over time, and they affect how much people eat; when unhealthy foods are made slightly less accessible, their consumption is reduced (Rozin et al., 2011; Wansink, 2010; [Downs, Loewenstein, & Wisdom, 2010](#); Dayan & Bar-Hillel, 2011). These and related issues are discussed in the report of the White House Task Force on Childhood Obesity, which places a great emphasis on the importance of accessibility (White House Task Force on Childhood Obesity, 2010).

In a sense, social settings produce something akin to “default rules” for food choices. These findings—about the importance of seemingly small features of context—have implications for continuing efforts to reduce childhood obesity and many other problems. One study, for example, finds that if people are prompted to consider whether to “downsize” their meals through a simple question, they will eat significantly less at fast-food restaurants (Schwartz et al., 2011). Indeed, the effect of this prompt was found to be greater than that of calorie labeling.

B. Automatic Enrollment and Default Rules: Mechanisms and Complexities

A great deal of research has attempted to explore exactly why default rules have such a large effect on outcomes (Gale, Iwry, & Walters, 2009; Dinner et al., 2009; Carroll et al., 2009). There appear to be three contributing factors. The first involves [inertia and procrastination](#). To alter the effect of the default rule, people must make an active choice to reject the default. In view of the power of inertia and the tendency to

procrastinate, people may simply continue with the status quo. It follows that self-consciously and well-chosen default rules by individuals, or by private or public institutions, can operate as commitment devices; consider, for example, a default rule in favor of monthly transfer of money into a savings account, or in favor of savings for retirement.

The second factor involves what might be taken to be an implicit endorsement of the default rule. Many people appear to conclude that the default was chosen for a reason; they believe that they should not depart from it unless they have particular information to justify a change.

Third, the default rule might establish the reference point for people's decisions; the established reference point has significant effects because people dislike losses from that reference point. If, for example, the default rule favors energy-efficient light bulbs, then the loss (in terms of reduced efficiency) may loom large and there will be a tendency to continue with energy efficient light bulbs. But if the default rule favors less efficient (and initially less expensive) light bulbs, then the loss in terms of upfront costs may loom large, and there will be a tendency to favor less efficient light bulbs.

In a significant number of domains, it might be possible to achieve regulatory goals, and to do so while maintaining freedom of choice and at low cost, by selecting good default rules and by avoiding harmful ones. The initial task, of course, is to identify the requirements of the law. Within the context of such requirements, one approach is to select the default rule that reflects what most people would choose if they were adequately informed. Suppose, for example, that a particular default rule would place a strong majority of the relevant population in the situation that they would favor if they made an informed choice. If so, there is a legitimate reason to adopt that default rule (with the understanding that for those who differ from the majority, it remains possible to opt out).

Of course, it may be necessary to do a great deal of work in order to identify the approach that informed people would choose, and on this count, actual evidence about informed choice is extremely important. The issue is simplified if the law requires a particular set of outcomes. A default rule might well make sense if it promotes automatic compliance with the law. Hence it is important to see that use of default rules may serve either as an independent approach, used instead of a mandate or a ban, or as a complementary approach, operating to facilitate compliance with statutory or regulatory requirements.

It is also important to see that default rules can be badly chosen or misused by private and public institutions alike and that some such rules

can be harmful. The FTC has expressed serious concerns about “negative option marketing,” which occurs when those who accept a “free” product are automatically enrolled in a plan or program that carries a monthly fee (unless they explicitly opt out) (16 CFR § 425; Federal Trade Commission, 2009). In some cases, negative option marketing has the unfortunate effect of using a default rule to exploit the tendency toward inertia in a way that is harmful to people’s welfare; it is easy to imagine both private and public analogues (consider, for example, an automatic enrollment policy that puts an unreasonably large amount of salary into savings).

To evaluate the use of automatic enrollment, the particular circumstances certainly matter. If automatic enrollment is not made transparent to those who are enrolled, it can be considered a form of manipulation, and the problem is worse if it is not in their long-term interest.

Some default rules apply to all of the relevant population, subject to the ability to opt out. Other default rules are personalized, in the sense that they draw on available information about which approach best suits individuals in the relevant population. A personalized default might be based on geographical or demographic variables; for example, income and age might be used in determining appropriate default rules for retirement plans. Alternatively, a personalized default might be based on people’s own past choices to the extent that they are available.

An advantage of personalized default rules is that they may well be more accurate than “mass” default rules. As technology evolves, it should be increasingly possible to produce personalized defaults, based on people’s own choices and situations, and likely to be far more accurate than more general ones. There will be excellent opportunities to use default rules to promote people’s welfare. To be sure, any such rules must respect the applicable laws, policies, and regulations involving personal privacy and should avoid unduly crude proxies.

It is important to note that default rules may not “stick” when the relevant population has strong contrary preferences. For example, a study in the United Kingdom found that most people rejected a savings plan with an unusually high default contribution rate (12 percent of before-tax income) (Beshears et al., 2010). Only about 25 percent of employees remained at that rate after a year, whereas about 60 of employees remained at a lower default contribution rate. One implication is that “extreme” defaults are less likely to stick; another implication, based on the lower incomes of those who stayed with the default, is that default rules may be more influential for

low-income workers than for their higher-earning counterparts (Beshears et al., 2010).

A related finding is that workers were not much affected by a default allocation of a fraction of their tax refund to US savings bonds, apparently because such workers had definite plans to spend their refunds (Bronchetti et al., 2011). A general lesson is that default rules will have a weaker effect, and potentially no effect, when the relevant population has a strong preference for a certain outcome.

C. Active Choices

An alternative approach, sometimes worth serious consideration, is to avoid any default rule and to require active choices (Carroll et al., 2009). Under this approach, people are required to make an actual choice among the various options; they are not defaulted into any particular alternative. With respect to savings, for example, an employer might reject both opt-out and opt-in and simply require employees to indicate their preferences. Evidence suggests that active choices result in far higher levels of savings than a default rules that requires people explicitly to opt in (Carroll et al., 2009).

If inertia and procrastination are playing a significant role, then active choosing may be better than opt-in, in which people end up with outcomes that they would not prefer if they were to make a choice. In such circumstances, active choosing increases the likelihood that people will end up with their preferred outcomes.

Active choosing might also be preferred when public officials lack relevant information, so that the chosen default rule might be harmful. This is an especially important point. If officials are inadequately informed, and if the default rule is no better than a guess, that rule might lead people in the wrong direction. The same point argues against a default rule when self-interested private groups have managed to call for it, even though it is not in the interest of those on whom it is imposed. Active choosing is much less risky on these counts.

As compared with either opt-in or opt-out, active choosing can have significant advantages when the relevant group has a great deal of diversity, so that a single approach is unlikely to fit variable circumstances. In such contexts, a default rule may also be harmful, because the power of inertia, or the force of suggestion, may mean that many people will end up in a situation that is not in their interest. For this reason, active choosing may be better.

On the other hand, active choosing can have significant disadvantages. One disadvantage is that in situations of unfamiliarity or great complexity, in which people lack information or experience, active choosing may impose unjustified or excessive burdens. These burdens include the resources required to enforce the requirement to choose and the time required for people to obtain relevant information and to make the choice. As compared with a default rule, active choosing increases the costs of decisions, possibly significantly; it also might increase errors, possibly significantly, if the area is unfamiliar and confusing. In such situations, opt-in or opt-out might produce better outcomes for people.

In the private sector, default rules are often in people's interests, and active choosing would impose unnecessary burdens. When public officials have good reason for confidence that a particular default rule will fit with the informed preferences of the relevant group, and thus promote its interests, it may be preferable to select that default rule rather than to require active choosing (Sunstein, 2010a). Personalized default rules, by virtue of their accuracy, may have particular virtues on this count.

D. Simplification As Nudge

Where it is not possible or best to change the default, a similar effect might be obtained merely by simplifying and easing people's choices. Complexity can have serious unintended effects (including indifference, delay, and confusion), potentially undermining regulatory goals by reducing compliance or by decreasing the likelihood that people will benefit from various policies and programs.

For example, a series of steps have been taken recently toward simplifying the Free Application for Federal Student Aid (FAFSA), reducing the number of questions through skip logic (a survey method that uses previous responses to determine subsequent questions) and allowing electronic retrieval of information (Office of Management and Budget, 2010). Use of a simpler and shorter form is accompanied by a pilot initiative to permit online users to transfer data previously supplied electronically in their tax forms directly into their FAFSA applications.

These steps are intended to simplify the application process for financial aid and thus to increase access to college; there is good reason to believe that such steps will enable many students to receive aid for attending college when they previously could not do so. Similar steps might be taken in many other domains. Considerable thought should be given to the question whether complexity is having unintended adverse effects and undermining regulatory programs.

The Department of Treasury has also launched an important initiative in the domain of Social Security and Supplemental Security Income: the “Direct Express” card program. Many people are now automatically receiving their money via a prepaid debit card. This measure increases, at the same time, both convenience and accuracy, thus reducing paperwork and costs. It provides particular help for those who lack bank accounts. Other programs might build on this approach by considering the choice between an opt-in and opt-out design and simplifying people’s choices. Some such programs might be designed to help those without bank accounts, by giving them such accounts or the functional equivalent.

In 2010, the Treasury Department also took several steps to increase simplicity by moving to electronic systems. Perhaps most importantly, the department finalized a rule to provide electronic payments to people receiving Social Security, Supplemental Security Income, Veterans, Railroad Retirement, and Office of Personnel Management benefits (29 CFR § 1926).

It is estimated that these steps will save over \$400 million in the first five years. The initiatives from the Treasury Department are in line with a 2010 request from the OMB asking agencies for initiatives that would promote electronic filing through “fillable fileable” forms, substitute electronic for paper signatures, increase administrative simplification, and reduce burdens on small business (Sunstein, 2010b). That request in turn produced seventy-two initiatives from various agencies, all designed to reduce burdens and to increase simplification (Office of Information and Regulatory Affairs, 2009). In total, those initiatives are expected to eliminate over 60 million hours of paperwork and reporting burdens each year.

In 2011, OMB followed the 2010 request with a new one, also emphasizing simplification and focusing in particular on small business and benefit programs (Sunstein, 2011). The request drew particular attention to the potential harms of complexity, noting that

the process of renewing or applying for benefits can be time-consuming, confusing, and unnecessarily complex, thus discouraging participation and undermining program goals. Sometimes agencies collect data that are unchanged from prior applications; in such circumstances, they might be able to use, or to give people the option to use, pre-populated electronic forms (Sunstein, 2011).

And indeed, there is reason to believe that imperfect take-up of existing benefit programs, including those that provide income support, is partly a

product of behavioral factors such as procrastination and inertia. It follows that efforts to increase simplicity, including automatic enrollment, may have substantial benefits.

E. Structuring Choices

Complexity can also create problems through a phenomenon known as choice overload. In the traditional view, having more choices helps, and never harms, consumers or program participants. This view is based on the reasonable judgment that, if an additional option is not better than existing options, people will simply not choose it. In general, more choices are indeed desirable, but an increasing body of research offers certain potential qualifications, especially in unusually complex situations (Sethi-Iyengar, Huberman, & Jiang, 2004). For example, there is some evidence that enrollment may decline, (Sethi-Iyengar, Huberman, & Jiang, 2004), and asset allocations may worsen, (Iyengar & Kamenica, 2010) as the menu of investment options in a 401(k) plan expands.

Responding to this general problem in the context of prescription drug plans, CMS has taken steps to maintain freedom of choice while also reducing unhelpful and unnecessary complexity (Gruber & Abaluck, 2011). The CMS Medicare Part D program rules require sponsors to ensure that when they provide multiple plan offerings, those offerings have meaningful differences. The rules also eliminate plans with persistently low enrollments, on the ground that those plans increase the complexity of choices without adding value.

IV. SALIENCE AS NUDGE

It is often possible to promote regulatory goals by making certain features of a product or a situation more salient to consumers. As a simple example of salience effects, consider alcohol taxes. There is evidence that when such taxes are specifically identified in the posted price, increases in such taxes have a larger negative effect on alcohol consumption than when they are applied at the register (Chetty, Looney, & Kroft, 2009; Finkelstein, 2009). Incentives matter, but in order to matter, they must be salient. Sensible regulatory policies, especially those that involve disclosure, are attentive to the importance of salience.

People's attention is limited, and regulatory goals are not always served merely by altering policy or disclosing information. The relevant policy or information must also be salient. In the context of fiscal policy, consider the question whether to provide payments in the form of a one-

time check or instead in the form of reduced withholding. Would one or another approach lead to increased spending?

In the abstract, it may be predicted that there would be no difference as a result of delivery method. But evidence suggests that a one-time stimulus payment has significantly greater effects in increasing spending than does an economically equivalent reduction in withholding (Sahm, Shapiro, & Slemrod, 2011). A potential explanation, with support in the evidence, involves the importance of salience or visibility. Indeed, a majority of households did not notice the withholding changes in the relevant study, and households who found “a small but repeated boost to their paychecks” appear to be less likely to use the money for significant purchases.

There are many potential applications. With respect to smoking prevention, for example, increased salience is a central purpose of disclosure requirements. The Smoking Prevention Act reflects recognition of this point in calling for new and more graphic warnings; the chosen images are vivid and will be highly salient. Similarly, OSHA has proposed a regulation that would require chemical manufacturers and importers to prepare labels for hazardous chemicals that include pictograms and signal words that can be easily understood by workers (29 CFR §§ 1910, 1915, 1926). Well-designed labels make relevant factors salient to those who will see them. The significant consequences of easy accessibility and convenience (return to the issue of obesity) can be seen as a close cousin of salience effects.

A similar point applies in the domain of energy efficiency. For many consumers, the potential savings of energy-efficient products may not be salient at the time of purchase, even if those savings are significant. The “Energy Paradox” refers to the fact that some consumers do not purchase energy-efficient products even when it is clearly in their economic interest to do so. Empirical work suggests that nonprice interventions, by making the effects of energy use more salient, can alter decisions and significantly reduce electricity use. There is evidence that such interventions can lead to private as well as public savings ([Howarth, Haddad, & Paton, 2000](#)). Consider, for example, the fact that energy costs are generally salient only once a month, when people are presented with the bill. Efforts to increase the salience of such costs, by displaying them in real time, can produce significant savings. Recall as well the finding that if people are asked to sign at the beginning rather than the end, the incidence of dishonesty decreases; early signing makes honesty salient ([Shu et al., 2012](#)).

A related approach attempts to identify and consider the frame through which people interpret information. There is some evidence that some

consumers may not seriously consider annuities in retirement to insure against longevity risk—the risk that they will outlive their assets—because they do not fully appreciate the potential advantages of annuities (Brown, 2007). One hypothesis is that some people evaluate annuities in an investment frame that focuses narrowly on risk and return (Brown et al., 2008). Looking through such a frame, consumers focus on the risk that they could die soon after annuity purchase and lose all of their money. Some evidence suggests that efforts to shift consumers into a consumption frame, which focuses on the end result of what they can consume over time, help consumers appreciate the potential benefits of annuities. The goal here is not to suggest a view on any particular approach to retirement; it is merely to emphasize that the relevant frame can increase salience.

V. SOCIAL NORMS AS NUDGES

Social scientists have emphasized the importance of social practices and norms, which have a significant influence on individual decisions. If people learn that they are using more energy than similarly situated others, their energy use may decline—saving money while also reducing pollution. The same point applies to health-related behavior. It has long been understood that people are more likely to engage in healthy behavior if they live or work with others who so engage. And if people are in a social network with other people who are obese, they are significantly more likely to become obese themselves. The behavior of relevant others can provide valuable information about sensible or appropriate courses of action. As noted above, informational cascades are a possible consequence, as people rely on, and thus amplify, the informational signals produced by the actions of their predecessors. Similarly, those actions can provide information about what others will approve and disapprove.

Research suggests that efforts to use social comparisons can alter decisions and significantly reduce economic and environmental costs. For example, people can be informed of how much energy they use, how their use compares with that of their neighbors, and how much they spend compared with what their neighbors spend. In the private sector, these points are being put to creative use. Opower, an American company that makes impressive use of behavioral economics, specializes in providing people with social comparisons, above all through its innovative Home Energy Report. Opower's nudges have had a major effect. Over four million households now receive Home Energy Reports, and they are saving people hundreds of millions of dollars as a result. (See opower.com for

details.) These and related interventions can save consumers a great deal of money and also reduce pollution.

These points have implications for regulatory policy. For example, smoking and seat belt regulations appear to have worked hand in hand with emerging social norms, helping to reduce deaths and injuries. In the context of seat belt usage, there has been a dramatic change in behavior, with an increase in a few decades from usage rates under 15 percent to usage rates over 70 percent, in significant part as a result of social norms that operated in concert with regulatory changes. In some domains, social norms have helped to promote compliance with law even without active enforcement. Public-private partnerships can be especially important in this domain, as those in the private sector emphasize norms that increase compliance with law and promote safer choices.

Consider as well the problem of distracted driving. On October 1, 2009, the President issued an executive order that bans federal employees from texting while driving. Such steps can help promote a social norm against texting while driving, thus reducing risks. This same approach—emphasizing social norms—might be applied in many domains. In the domain of childhood obesity, for example, a social norm in favor of healthy eating and proper exercise could produce significant health benefits. Here, as elsewhere, public-private partnerships can play a key role, with those in the private sector helping to spur emerging norms that promote better choices by and for children.

In particular, the “Let’s Move” initiative has emphasized such partnerships. First Lady Michelle Obama has collaborated with Walmart to promote healthier choices (Mulligan, 2011). As part of that initiative, Walmart has committed to reformulating thousands of everyday packaged food items by 2015 by reducing sodium 25 percent and added sugars 10 percent, and by removing all remaining industrial produced trans fats. It has also committed to reduce the costs of healthier options, thus making those costs comparable to the costs of less healthy choices, and at the same time to reduce the costs of fruits and vegetables. Finally, Walmart has agreed to develop a “healthy seal” to help consumers to identify healthy choices.

In a similar vein, a number of companies, including Kraft Foods, General Mills, Coca-Cola, Pepsi, and Kellogg, have pledged to remove 1.5 trillion calories from their products by 2015, in an effort to combat childhood obesity (USA Today, 2010). The relevant steps include reduction of product sizes and introduction of lower calorie foods. Finally, the Food Marketing Institute and the Grocery Manufacturers Association have agreed

to promote informed choice through a “Nutrition Keys” label, designed in part to combat childhood obesity (Food Market Institute, 2011).

WELL BEYOND INCENTIVES

The goal of this chapter has been to outline some of the key findings in recent behavioral research and to sketch the implications for regulatory policy. A general conclusion is that while material incentives (including price and anticipated health effects) greatly matter, outcomes are independently influenced by choice architecture, including (1) the social environment and (2) prevailing social norms. When some people, cities, and nations do well and others less so, it is often because the former, and not the latter, are able to benefit from aspects of the environment, and from prevailing norms, that enable them to take for granted, and perhaps not even to think much about, a set of practices that serve them well. And as we have seen, some behaviorally informed tools, such as automatic enrollment, can have very large effects – larger, in fact, than significant economic incentives ([Chetty et al., 2012](#)).

While disclosure of information is an important regulatory tool, steps must be taken to ensure that disclosure will be not merely technically accurate but also meaningful and helpful. Such steps require careful attention to how people process and use information. It is useful to distinguish between summary disclosure, typically provided at the point of purchase, and full disclosure, typically provided on the Internet. Summary disclosure should be clear, simple, and salient, and it should emphasize factors that matter to people (such as annual dollar value of fuel economy or energy-efficient choices).

Full disclosure should provide information that can be used in multiple ways, thus improving the operation of markets; often the most important uses come from the private sector. In all cases, disclosure is most useful if it informs people of what, precisely, they might do in order to avoid significant risks or obtain significant benefits.

Default rules can greatly affect social outcomes, and in some circumstances, sensible defaults can serve as a complement or alternative to mandates and bans. One of the advantages of well-chosen default rules is that they can simplify and ease choices—for example, by producing automatic enrollment in programs that are generally beneficial while also allowing people to opt out. A potential problem is that regulators may not know which default rule is best and one size may not fit all. When the relevant group is diverse and the domain is familiar, active choosing is likely to be preferable to default rules.

Because complexity can often have undesirable or unintended side effects—including high costs, noncompliance with law, and reduced participation in useful programs—simplification helps to promote regulatory goals. Indeed, simplification can often have surprisingly large effects. Reduced paperwork and form-filling burdens (as, for example, through fewer questions, use of skip patterns, electronic filing, and prepopulation) can produce significant benefits. It is also desirable to take steps to ease participation in both private and public programs by increasing convenience and by giving people clearer signals about what, exactly, they are required to do.

As behavioral research has shown, people are far more likely to respond when certain facts, risks, or possibilities are salient; effective warnings take account of this fact. Finally, regulation can work in concert with social norms, helping to promote agreed-upon public goals and to increase compliance with legal requirements. The result can be to save both money and lives. Public–private partnerships, enlisting the creativity of the private sector, are especially helpful in this regard, above all because they build on, and sometimes help promote, emerging social norms.

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