

# The Dark Side of Choice: When Choice Impairs Social Welfare

Simona Botti and Sheena S. Iyengar

*The provision of choice in terms of how people use goods and services has been proposed as a vehicle of improvement of social welfare. This article highlights some of the costs and benefits of creating choice, and it discusses how much choice policy makers and other agents (e.g., employers, retailers) should ideally grant and in what form they should grant it.*

“We have given away far too many freedoms in order to be free. Now it’s time to take some back.”

—John le Carre, *The Secret Pilgrim*

In the United States, public policy trends seem to underscore the conviction that social welfare can be pursued through the provision and exercise of choice. For example, President Bush expressed his belief in the benefits of choice in his State of the Union address (February 2, 2005) with respect to social security privatization, declaring that “we have the responsibility to make the system a better deal for younger workers, and the best way to reach that goal is through voluntary personal retirement accounts.... It is time to extend the same security, and choice, and ownership [as that of federal employees] to young Americans.” The current administration has also supported school vouchers, which allow parents to choose their children’s schools under the presumption voiced by the president that “more choices for parents and students will raise the bar for everyone” (Bush and Hughes 1999, pp. 233–34). Similarly, the president has encouraged reform measures for prescription drugs and Medicare programs that would give seniors more choices with respect to their health care. To this end, he stated, “I’m absolutely opposed to a national health care plan. I don’t want the federal government making decisions for consumers or for providers. I trust people; I don’t trust the federal government. I don’t want the federal government making decisions on behalf of everybody” (St. Louis Debate, October 17, 2004).

The concept of choice is fundamental to people’s sense of themselves and of their community, especially in independent societies, such as the United States, that cherish the values of autonomy, individuality, and self-determination

(Markus and Kitayama 1991). In the United States, from Thomas Jefferson to Arnold Toynbee to the modern day, both politicians and the lay public have presumed the superlative social benefits of choice. This belief even affects the way Americans go about constructing and interpreting public policies. For example, Beattie and colleagues (1994) find that even when contemplating whether teenagers should be allowed to choose abortions, members of this independent society construe this decision as being about whether teenagers should be accorded individual choice. In an experiment, participants first read a scenario that described a teenager who must decide whether to keep or abort an unwanted pregnancy. Participants were then asked whether the teenager or her parents should make the choice. The majority of the participants, whose cultural norms emphasize the importance of personal causality and self-determination, preferred that the teenager make the decision, and they justified this preference by referring to the normative value of autonomy and standing. Thus, in independent societies, the benefits of choice are assumed on the bases of normative and cultural underpinnings.

It is not surprising that policy makers instinctively draw on the concept of choice as the remedy for problems in social welfare. That is, both when they have discretion about how much choice to allow, as in the case of the Chicago Public School system (see Cullen, Jacob, and Levitt 2003), and when they follow the guidelines of the Federal Trade Commission regarding competition and the promotion of choice, policy makers have been granting greater numbers of options in public goods and services under the presumption that with more choice comes an increasing chance for a better outcome. We contend that the benefits associated with the provision of choice may be limited to issues in which decision complexity is manageable; as decision complexity rises, the very provision of choice, which is seemingly desirable and beneficial, can become paralyzing and debilitating, resulting in suboptimal decision making. The organization of this article is as follows: We begin by highlighting the benefits of choice and the rationale behind how choice should yield beneficial outcomes. Next, we discuss the psychological process that people undergo when choosing and how this process can lead to unforeseen detriments associated with more choice. Then, we discuss policy implica-

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*Simona Botti* is Assistant Professor of Marketing, S.C. Johnson Graduate School of Management, Cornell University (e-mail: sb376@cornell.edu). *Sheena S. Iyengar* is Associate Professor of Management, Graduate School of Business, Columbia University (e-mail: ss957@columbia.edu). The authors thank John Lynch, Alex Chernev, Kristin Diehl, and Anu Mitra for their careful, insightful review of a previous draft. They also thank Ori Heffetz for his helpful comments.

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tions; specifically, we focus on the ramifications of offering choice in the policy domains of retirement savings and health care.

## The Benefits of Choice

For centuries, social scientists have recognized the obvious benefits of choice. Microeconomic theory and research presumes that the provision of choice is necessarily advantageous because it allows for utility maximization. Moreover, the belief that the provision of choice yields beneficial outcomes for both individuals and society at large is inherent to basic social science theory and research. The encouragement of choice proliferation is largely based on the following three arguments: First, choice fosters preference matching; second, the provision of choices usually presupposes competition among the sellers; and third, under optimal search models, rational consumers would stop searching if the emotional and cognitive costs of choice outweighed its benefits.

Belief in the benefits of choice is based on acceptance of the rational choice theory, which assumes that people hold stable, rank-ordered preferences and that these preferences are not influenced by contextual factors (for a review, see Payne, Bettman, and Johnson 1993). Given this assumption of a well-defined utility function, classic economics endeavors to solve constrained maximization problems. Thus, to the effect that more choice equates to fewer constraints, an expansion in the size of the choice set can never make people worse off. That is, holding constant the terms of sale, rational decision makers confronted by a choice among differentiated products maximize their utility by choosing the choice-set option that best matches their predefined preferences (Mussa and Rosen 1978). Thus, an increase in the number of occasions in which choice can be exercised and in the number of alternatives at any given occasion can make consumers better off by allowing their needs and tastes to be met more accurately. For example, Salop (1979) theorizes that if sellers are evenly distributed along the circumference of a circular product space and consumers have differentiated preferences, the removal of some subset of the sellers will increase consumers' average travel cost to the closest alternative, thus reducing their utility. Brynjolfsson, Hu, and Smith (2003) offer another example of how this paradigm operates. They empirically show that consumers' welfare increases substantially with the greater product variety introduced by online booksellers, which can offer hard-to-find books that are not readily available through bricks-and-mortar bookstores. They quantify the gain in consumer surplus from having online access to an increased number of books as between \$731 million and \$1.03 billion for the year 2000 alone.

The preference-matching mechanism we describe would operate even if seller behavior were exogenous. However, when more choice is a function of free competitive entry, consumers benefit because profit-maximizing sellers are forced to improve the terms of sale, offering higher quality and lower prices to win business.

Classic economic models supporting the conclusion that consumers will be better off with more available options do not take into consideration cognitive limitations, which

would presume a finite capacity of a person's ability to encode the options and the information associated with those options (Simon 1957). In contrast, research in psychology and consumer behavior has advanced the notion that consumers can be overloaded by too much choice because of the "cost of thinking" (Shugan 1980), or the cognitive effort required to search for, compare, and evaluate the choice set options (Greenleaf and Lehmann 1995; Malhotra 1982). To account for these cognitive limitations, economists have tried to model the processes by which people solve their utility maximization problems when search is costly (Stigler 1961); however, even after the inclusion of cognitive search costs, economic models of human choice still predict that the provision of choice can never make rational consumers worse off. Under optimal search models, consumers would simply stop searching if the costs outweighed the benefits, consequently avoiding information overload. For example, models of rational sequential search, such as the one Hauser and Wernerfelt (1990) propose, show that if the incremental cost of evaluative search were superior to the incremental benefit of including an additional brand in the consideration set, the consumer would stop searching and instead opt to choose among the available alternatives.

As with the economic models we just reviewed, work in psychology supports the conclusion that more choice improves individual welfare. Classic research in psychology theory has compellingly demonstrated that people prefer making their own choices rather than having them externally dictated. The advantages of choice pertain to different domains and are accounted for by several psychological mechanisms. First, choice enhances perceptions of self-determination and intrinsic motivation, which in turn have been associated with desirable consequences, such as greater satisfaction with the task and the decision outcome and more positive affect (DeCharms 1968; Deci 1975; Deci and Ryan 1985). To illustrate the positive effects of choice on motivation, we can look to the field of education, in which choice has been found to increase students' performance (Perlmutter and Monty 1977). In Zuckerman and colleagues' (1978) well-known study, for example, students were either asked to choose which of six puzzles they would like to solve or assigned one of the puzzles by the experimenter. The results show that students who personally chose exhibited a higher level of intrinsic motivation and better cognitive performance than students who had the task assigned. Notably, the beneficial effects of choice on intrinsic motivation and cognitive performance persist even when the choice is irrelevant to the instructional activity. As Cordova and Lepper (1996) demonstrate, students' understanding of the mathematical concepts involved in a computer game improved when they were given the opportunity to choose game features, such as the characters' names, which were only incidental to the main educational objectives of the game.

Second, choice allows people to feel in control of their own fate, thus improving psychological and physical condition. People given choices have been found to experience increased life satisfaction and health status, whereas the absence or removal of choice makes them helpless and hopeless (Langer 1975; Lefcourt 1973; Rotter 1966; Schulz

and Hanusa 1978; Seligman 1975; Taylor and Brown 1988). Even the process of giving people seemingly trivial choices can have powerful effects on feelings of control. Langer and Rodin (1976) conducted a field study in a nursing home in which a group of patients was given more control over their external environment by letting them make relatively inconsequential decisions, such as choosing when to watch a movie or how to arrange their bedroom furniture. This group was compared with another group of patients who had a lower level of control (i.e., the same decisions were made for them by the nursing-home staff). The results show an increase in choosers' happiness and activity levels relative to nonchoosers, as well as better health conditions and even lower death rates in the long run. Similarly, Taylor (1979) shows that the depersonalization that hospitalized patients frequently experience contributes to their perceptions of loss of control and subsequent increase in anxiety and depression, as well as deterioration of physiological states. Conversely, the simple belief that some form of control over life is possible (e.g., by changing exercise habits or increasing leisure time) has been found to improve the ability to cope with and adjust to a serious illness (Taylor, Lichtman, and Wood 1984).

Finally, choice causes decision makers to bolster subjective evaluations of decision outcomes, resulting in greater consistency between attitudes and behaviors and increased psychological well-being (Bem 1967; Cialdini, Trost, and Newsom 1995; Festinger 1957). Subjective bolstering of decision outcomes may happen even before (not only after) the decision is made. For example, Shafir, Simonson, and Tversky (1993) demonstrate that in comparing available alternatives, decision makers attempt to generate compelling reasons for selecting one option over the others, and eventually, they choose the option that is *a priori* considered easier to explain and justify. Russo, Meloy, and Medvec (1998) find that people systematically distort information in favor of their preferred option, whether this preference has been established in the long run or has just been developed.

To summarize, prior research in economics and psychology endorses policy makers' preferences for expanding choice opportunities. According to rational economic theory, choice can never reduce well-being, because it enables consumers to engage in preference matching without necessarily burdening their cognitive system and because it fosters competition. Conversely, psychology explains the benefits of choice with an increase in intrinsic motivation and perceived control and with decision makers' subjective tendency to bolster the value of personally chosen outcomes. However, we question whether these findings alone can support policy makers' assumptions that choice is necessarily beneficial. Should policy makers instead ask themselves whether there are circumstances in which more choices do not guarantee people's welfare? If so, when should choice be encouraged, and when should it be restricted?

Prior research has compellingly demonstrated the advantages of choosing, at least in countries that ostensibly pursue the values of freedom, autonomy, and self-determination. Critically, however, these advantages have been restricted to relatively easy decisions. In contrast, the decisions that interest policy makers, such as determining which school a

child should attend, what health treatment to undergo, or how to invest retirement money, are more difficult because they are usually highly consequential, involve a large number of alternatives, and may entail the consideration of alternative options. In the next section, we delineate some of the constraints to the benefits of choice, particularly when the decisions being made are complex.

## The Detriments of Choice

Consider the everyday grocery-shopping experience of a typical U.S. consumer. An ordinary supermarket contains 285 varieties of cookies, including 21 chocolate chip options alone; 20 different types of Goldfish crackers; 13 "sports drinks," 65 "box drinks," and 85 flavors of juice; a dozen varieties of Pringles potato chips; 80 pain relievers; 40 lipstick shades; 16 varieties of instant mashed potatoes, 75 different instant gravies, and 120 different pasta sauces; 175 different salad dressings; and a whopping 275 types of cereal. With such a plethora of choices, how is it possible for people to be confident in their decisions? Does the act of choosing overwhelm unprepared shoppers? Even if people can wade through the sea of options, will they make rational decisions based on a careful inspection and comparison of the differences between products?

The average person, then, should be well prepared for choosing from a vast variety of options across myriad decision-making domains. Yet Iyengar and Lepper (2000) observe that though consumers prefer contexts that offer them more rather than fewer options, subsequently the very contexts that offer more options can prove debilitating during the choice process. They set up a tasting booth in an upscale grocery store, Draeger's, located in Menlo Park, Calif., that displayed either 6 different flavors of jam or 24 different flavors. They monitored the traffic at the tasting booth, discovering that whereas 60% of the passersby stopped to sample one of the displayed jams when there were 24 flavors, only 40% stopped when there were 6 flavors. However, comparisons of purchase behavior revealed that of the customers attracted to the jam in the extensive-choice condition, only 3% purchased a jar of jam, whereas 30% of the customers who encountered the limited display bought a jar.

Indeed, subsequent studies conducted across a variety of contexts reveal further pernicious consequences of offering choosers more rather than fewer options. First, the presence of more rather than fewer options makes decision makers more likely to decide against choosing, even when the choice of opting out has negative consequences for their future well-being (Iyengar, Jiang, and Kamenica 2006). Second, the presence of more choices has been associated with lower chooser confidence and greater experiences of negative affect; that is, people choosing from more extensive choice sets are less satisfied with their decision outcomes (e.g., chocolate choice) and pay more for purchases that make them less happy (e.g., car choice). Even when more choices yield seemingly better objective outcomes (i.e., higher salaries for job seekers), they yield worse subjective outcomes. For example, job seekers who pursued more rather than fewer job opportunities were less satisfied

with their accepted job offer and reported less commitment to their position (Iyengar, Elwork, and Schwartz 2006).

The observation that the provision of choice need not always be beneficial and may, at times, be detrimental is not limited solely to contexts of choice overload. Decision makers' uncertainties arise even in circumstances in which the choices are few. A series of studies that Botti and Iyengar (2004) conducted show that when decision makers chose among a limited set of unappealing options, such as bad-tasting yogurt flavors, despite their preference for choosing for themselves, they were less satisfied with their decision outcomes than were those for whom the same decision outcomes were externally dictated.

Therefore, these results suggest that there is a discrepancy between people's preferences for increased choice and their actual reactions to the provision of choice. Specifically, although increased choice is perceived as desirable, in some circumstances, the provision of choice either inhibits decision makers' likelihood to make a choice or detrimentally affects their experienced well-being after the choice is made. For policy makers, both the tendency to avoid choice making and the decrease in decision makers' welfare represent undesirable outcomes, especially when there is a clear social goal to get people to choose something rather than nothing. These unwanted outcomes can be explained by three basic causal factors—information overload, unclear preferences, and negative emotions—all of which are associated with highly complex decisions, which we discuss in greater detail subsequently.

Given humans' finite ability to encode information, how do people make choices when given an overwhelmingly large data set to analyze? An increase in the number of choices may raise the cognitive costs involved in evaluating the relative attractiveness of each option so much as to impair rational decision making (Greenleaf and Lehmann 1995; Huffman and Kahn 1998; Malhotra 1982; Shugan 1980). Specifically, research has shown that decision makers who are confronted with large choice sets tend to use noncompensatory choice heuristics, such as lexicographic rules and elimination by aspects, rather than multiattribute models of choice, in which the relative importance and performance of each attribute is calculated across the options in a compensatory fashion (see Payne, Bettman, and Johnson 1993). In some cases, people may adopt a two-stage process in which they use noncompensatory models as an initial screening of the available alternatives and use compensatory models only after they reduce the choice set to a more manageable size (Biehal and Chakravarti 1986; Johnson and Meyer 1984; Payne, Bettman, and Johnson 1993).

However, the use of noncompensatory decision-making strategies may incorrectly eliminate valuable options if the attribute used to discriminate among alternatives is not important or is negatively correlated with other important attributes. Therefore, the objective of reducing the cognitive costs involved in making the choice can produce suboptimal decisions and subsequent dissatisfying outcomes. For example, Kahn and Baron (1995) show that people prefer using noncompensatory heuristics when they make cognitively complex decisions in the field of health care. More often than not, these types of heuristics caused study participants to select health treatments on the basis of the factor they

considered the most important, which was usually the survival rate. Because prior research has shown that, in many cases, survival is not the patient's only consideration, Kahn and Baron conclude (p. 325) that "the use of such noncompensatory rules may lead patients away from considering treatment options that may have greater holistic value."

Kahn and Baron's (1995) results represent additional evidence in support of psychologists' assertion that contrary to rational choice theory, people do not always hold stable and clearly ordered preferences that are simply retrieved at the moment of the choice. On the contrary, according to psychology research, most of the time, people do not know their preferences before their decision-making task, but they construct them on the spot during the decision process; therefore, preferences are subject to contextual influences (Feldman and Lynch 1988; Payne, Bettman, and Johnson 1993). Moreover, when personal preferences are not well known, cognitive conflicts can be generated even when the options are limited, causing decision makers either to avoid making the choice or to experience dissatisfaction with their decision outcomes (Chernev 2003; Dhar 1997; Huffman and Kahn 1998; Shafir, Simonson, and Tversky 1993).

Aside from the cognitive constraints of handling choice, people who lack preestablished preferences and knowledge of possible trade-offs embedded in the choice itself can generate suboptimal decisions because of ensuing negative emotions. Making a decision naturally involves some degree of emotional conflict because the selection of one option is associated with the rejection of other alternatives. For example, it has been shown that consumers who feel regret for the forgone options may experience choice avoidance and lower outcome satisfaction (Beattie et al. 1994; Simonson 1992). Building on these results, more recent research has investigated in greater detail the interaction among choice avoidance, regret, and satisfaction (Amir and Ariely 2005). This research has found that despite people's general preference for choice contexts in which choice flexibility is not restricted, allowing for the possibility to delay decisions increases anticipated regret because it reduces the justification for choosing, thus impairing purchase decisions. In addition, decision makers' elaboration of the relative advantages and disadvantages of particular choices has been found both to reduce the appeal of the chosen alternatives and to increase the evaluation of the forsaken ones (Brenner, Rottenstreich, and Sood 1999; Carmon, Wertenbroch, and Zeelenberg 2003).

However, the emotional conflict that is commonly associated with choosing can be heightened in specific circumstances, thus contributing to unsatisfactory decision outcomes. First, greater emotional conflict follows from an increasingly aversive attitude toward making a decision. Research has shown that a choice from all negatively valenced alternatives leads to conflicts of the avoid-avoid type, which generate more psychological distress than conflicts of the approach-approach type, which are involved in a choice from all positively valenced options (Lewin 1951; Miller 1944). In keeping with these findings, Botti and Iyengar (2004) show that choosing from among all undesirable options is more dissatisfying than having the same choice externally imposed because the act of choosing generates greater emotional pain. When confronted with unappealing

options, choosers entertain more unpleasant thoughts than nonchoosers, which aggravates their disliking for an already aversive outcome.

Second, negative emotions often arise in making a decision as a consequence of trade-offs among emotion-laden attributes, namely, attributes that are associated with highly consequential outcomes and highly valued goals, such as the desire for safety and environmental friendliness when purchasing a car (Luce, Payne, and Bettman 1999). When the values of these emotion-laden attributes are negatively correlated so that one attribute must be sacrificed for the other attribute to be maximized, decision makers cope with the ensuing negative emotions by using avoidant responses, such as choosing to maintain the status quo, choosing a dominating alternative, or choosing to prolong the search (Luce 1998). For example, Redelmeier and Shafir (1995) show that physicians and legislators who choose from health treatments and policies, each one having relative advantages and disadvantages over the others, often opt to retain the status quo, thus forgoing potentially superior options.

In summary, the research we previously reviewed suggests that as choices become increasingly complex, the beneficial effects of choosing on overall well-being are undermined. When choices are consequential, are aversive, and/or involve a large number of options, a “rational” decision based on compensatory models becomes more effortful, preference matching is inhibited by uncertain preferences, and negative emotions elicited by the decision process spoil the utility derived from the decision outcome. Many of the choice domains that policy makers consider fit these very conditions. Recognizing that providing choices on complex matters may damage people’s welfare raises concerns about when and how choice proliferation should be encouraged. After all, policy makers should avoid situations in which people, uncertain about their preferences and impaired by cognitive overload and emotional concerns, do not choose or make choices that elicit unsatisfying results. In the next section, we examine generic public policy remedies for the psychological mechanisms underlying complex decisions, focusing on the domains of financial and medical decision making.

## Choice, Social Welfare, and Public Policy

Policy makers today can provide people with the ability to make choices that individually customize public goods and services. Yet in doing so, they must be mindful of people’s cognitive limitations, knowledge about their own preference, and negative emotional responses that may complicate choices and thwart individual welfare. How can policy makers who are given the statutory authority to decide how much choice to grant create choice for their constituencies without debilitating people with a preponderance of choice? We consider several strategies for doing so, though none is ideal or without limitations.

When the detrimental effects of choice provision are attributed to information overload, policy makers and agents seeking to help consumers should avoid adding options without considering their content and quality. According to economic search models, the expected value of the best of  $N$

available alternatives increases with the choice set size  $N$  at a decreasing rate (Moorthy, Ratchford, and Talukdar 1997). The question is, When is the potential benefit of choosing from  $N + 1$  rather than  $N$  outweighed by the increase in information overload? Research on product assortment has shown that when the number of the alternatives is held constant, information overload is likely to decrease if the importance of the product attributes is high and if these attributes maximize the differential attractiveness among product alternatives (see Broniarczyk 2006). Thus, when the chance that the extra option will maximize decision makers’ utility is high, more choice should be encouraged, but when products are relatively homogeneous or people cannot easily discriminate among them, a salesperson who offers more recommendations, a retailer that adds more stockkeeping units to a category, or an employer that offers more 401(k) options may actually decrease consumer welfare.

In many online shopping contexts, sellers recommend a set of options that are expected to be a good fit to the consumer’s tastes, ordered from best to worst. Diehl (2005) shows that when a seller offered the top 50 rather than the top 10 options, people chose lower-quality options; they searched too much and were insufficiently selective when confronted with a larger set of lower average quality. Therefore, policy makers must balance the desire to enable more choice without diluting the average quality of the choice set available to decision makers.

Another recommendation to prevent the negative effect of information overload on consumers’ welfare is to facilitate the decision-making process to prevent cognitive strain. One way to do this is to employ decision support systems or recommendation systems to define the choice set. Smart screening tools and interactive decision aids allow for the measurement of people’s preference structures to build short, ordered lists of alternatives that match those preferences. Such tools have been found to favorably influence both the quality and the efficiency of purchase decisions, enabling consumers to preserve their cognitive effort by focusing on the evaluation of high-quality options (Diehl, Kornish, and Lynch 2003; Häubl and Trifts 2000). In these cases, consumers’ temptation to deepen their search and dilute the quality of the choice set could be discouraged by offering the option to see more alternatives only at a cost.

Alternatively, categorization could help people’s information processing by narrowing the choice set to those alternatives with high utility for the decision maker (for a review of the influence of information format on information processing, see Broniarczyk 2006). For example, Hoch, Bradlow, and Wansink (1999) suggest that the information structure embedded in the option display affects choosers’ abilities to distinguish among options and to evaluate each option’s attributes. Similarly, Huffman and Khan (1998) demonstrate that an attribute-based presentation format in which consumers evaluate each attribute results in lower perceived choice complexity, higher likelihood of making a choice, and greater satisfaction with the decision outcome than an alternative-based presentation format in which consumers evaluate each alternative. Building on these findings, a series of field and laboratory studies that Iyengar and Mogilner (2005) conducted shows that the categorization of alternatives aids the decision-making process by highlight-

ing particular attributes of each option. By limiting people's choice sets at different stages throughout the choice process, policy makers may ease the cognitive burden that comes with information overload and thus reduce the stress associated with choice that could hinder people's well-being.

When the detriments of choice are caused by consumers' unclear preferences, policy implications relate mainly to the role of default options and preference learning. First, policy makers could consider adding to the choice set a default option that is constructed to meet the preferences of the "typical person." Nevertheless, as people's tendency to accept the status quo has been widely documented in the literature (Ritov and Baron 1992; Samuelson and Zeckhauser 1988), several concerns arise regarding policies that endorse default options. For example, the presence of a default option is usually accompanied by an inertia effect, which may inhibit people from seeking alternatives that are superior to the default (Madrian and Shea 2001). Offering a default option may also be interpreted as paternalistic, which can be taken as a disguised attack on personal freedom. However, these concerns can potentially be assuaged when, given certain sets of conditions, an average "best" option can be identified and when suboptimal choice avoidance can be prevented (Johnson, Steffel, and Goldstein 2005); in addition, publicizing people's right to opt out from the default should protect their freedom.

A second class of solutions exists to mitigate information overload when consumers lack preestablished preferences: Consumers can be helped in the process of developing attribute preferences and understanding their own trade-offs (Huffman and Kahn 1998). For example, Hoeffler (2003) investigates the mechanisms by which people can be taught to make choices that are informed by their known preferences, even in the context of really new products, for which these preferences are usually highly uncertain. Hoeffler finds that greater preference stability can be achieved by adding to existing preference measurement techniques, such as conjoint analysis, more innovative techniques that ask participants to engage in mental simulations and analogies. Similarly, Hoeffler and Ariely (1999) prove that forcing consumers to make difficult choices in which none of the choice set options dominates causes them to learn the option trade-offs, resulting in increased confidence and greater preference consistency over time. Johnson, Steffel, and

Goldstein (2005) discuss an example of a decision aid that can help trade-off simulation: Decision Builder. Decision Builder is a computer interface that enables people to learn about their preferences in the field of retirement investments by constructing different types of retirement income probability distributions and simulating outcomes.

Finally, if the disadvantages of choice are caused by the psychological pain that people experience when they evaluate the options and select which ones to forgo, policy makers should work toward implementing a review process that would give people the opportunity to seek out advice or delegate decision making to parties they perceive as impartial. Delegating decision making could improve consumers' subjective well-being by relieving them of the responsibility of unwanted decision consequences and subsequent regret (Botti and McGill 2006; Ordóñez and Connolly 2000; Zeelenberg, Van Dijk, and Manstead 2000). At the same time, because the act of relinquishing control over a decision is, in itself, an expression of self-determination, individual freedom would not be threatened by the absence of a personally made choice.

Still, this policy is dependent on building trust between the individual and the impartial third party. For example, Aggarwal and Botti (2006) show that whenever a consumer-provider relationship is governed by norms of mutual concern, consumers believe that the provider is willing to act in their best interests; as a result, consumers are as satisfied with a provider-made choice as they are with a self-made one. In the domain of health care, Orfali and Gordon (2004) hypothesize that parents' ability to cope with hospitalized children depends on the level of trust and emotional support that characterizes the doctor-parent relationship. Consistently, both Schneider (1998) and Taylor (1979) argue that the increasing bureaucratization of health care alienates patients, who may react to this progressive depersonalization by forcefully claiming their rights to choose—perhaps to their detriment.

In summary, the generic public policy recommendations we discussed in this section and summarize in Table 1 address the detriments of choice on consumer well-being without necessarily compromising individual freedoms. It is up to policy makers and other agents who attempt to promote consumer welfare to assess the merits and the feasibility of these suggested solutions. It is clear that providing

**Table 1. Psychological Mechanisms Causing the Detriments of Choice and Generic Policy Remedies**

Psychological Mechanism for the Detriments of Choice	Generic Public Policy Remedies
<i>Information overload:</i> An increase in the number of options raises the cognitive costs involved in comparing and evaluating the options and thus leads to suboptimal decision strategies.	<ul style="list-style-type: none"> <li>•Do not include an additional option unless there is a substantial chance that it will increase consumer welfare.</li> <li>•Facilitate the choice-making process by recommending decision support systems and/or effective categorization.</li> </ul>
<i>Preference uncertainty:</i> Consumers do not necessarily hold well-defined, stable, rank-ordered preferences before the decision is made.	<ul style="list-style-type: none"> <li>•Identify wise default options, with the possibility to opt out.</li> <li>•Provide opportunities for practicing and understanding personal preferences and trade-offs.</li> </ul>
<i>Negative emotions:</i> Choosing among undesirable options and trading off emotion-laden attributes generates psychological pain.	<ul style="list-style-type: none"> <li>•Encourage choice delegation to an expert.</li> <li>•Establish a relationship of mutual trust between providers and consumers.</li> </ul>

more occasions to choose and a larger number of options for each decision without acknowledging the potential disadvantages of necessitating individual expertise and reducing subjective well-being may not improve social welfare. In the next two sections, we investigate these issues further in the domains of retirement savings and health care decisions.

## Personal Choice and Financial Decision Making

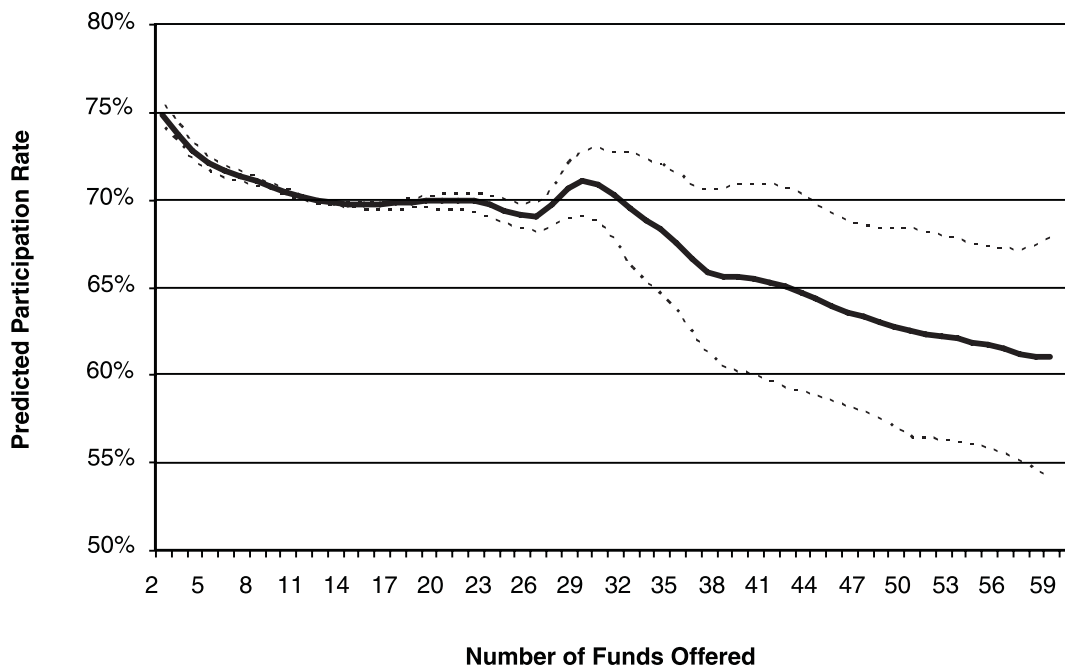
Consider a consequential decision-making domain in which people's choices affect their future financial health and, in turn, their overall subjective and physical well-being. A priori, it might be expected that people are particularly attentive to knowing their preferences in such high-stakes circumstances. However, Benartzi and Thaler's (2002) studies show that decision makers have ill-defined preferences in terms of their investment choices. In a series of laboratory and field studies in the domain of saving for retirement, investors who were able to choose their own retirement portfolio subsequently evaluated this portfolio to be as attractive as the asset allocation of the average participant and even found the median asset allocation more attractive than the one they had chosen.

Although investors reveal ill-defined preferences in their investment decisions, the most commonly available retirement savings program for Americans is one that necessitates individual decision making. That program is the 401(k) plan, a contribution-based retirement plan that became popular in the 1980s. In the 401(k), employees defer some amount of their salary into this plan and benefit from tax-deferred income and a matching employer investment (typi-

cally between 50% and 100% of the employee's contributions). At the same time, participation in the plan bears investment risk for the employees. Nevertheless, such plans have increasingly replaced pension programs: Between 1990 and 2001, 401(k) plan account assets increased three-fold to a total of \$1.75 trillion, representing the contributions of 45 million 401(k)-participating workers (Holden and VanDerhei 2003). With the increased options available to them, do participants in 401(k) plans make investment decisions that are in the best interests of their long-term financial goals?

Iyengar, Jiang, and Huberman's (2004) recent archival analysis shows that when people are confronted with choosing how to save for their retirement, they make choices that are inconsistent with the goal of enhancing their expected financial returns over the long run. The data set analyzed in the current study incorporates approximately 800,000 eligible employees from 657 companies, each of which offer plans that include from 2 to 60 investment options. The data set provides individual data and information on specific attributes for each plan, allowing for an examination of the effects of increased choice on employees' participation rates and allocation decisions. Although clear monetary gains were to be made through incentives such as employers matching contributions dollar for dollar and the option to invest in high-growth equities, findings show that employees who are eligible for "defined-contribution" plans are more likely to opt out when they are offered increasing numbers of fund options. As we show in Figure 1, for every 10-option increase, predicted individual participation probabilities decline by 2%. In particular, as the number of funds increases from 2 to 11, a steady decline in participation from

Figure 1. The Relationship Between Participation in 401(k) and Number of Funds Offered



75% to 70% followed. Beyond 11 fund options, participation rates stagnated at approximately 70% until the number of funds exceeded 30, at which point they resumed their downward trend to 61% at 59 options. To better understand the consequences of not participating, consider a 25-year-old median salary earner who chooses to postpone participating in his or her 401(k) plan for just one year. By the age of 60 (assuming a 9% annual total return; a mix of stock and bond return), this person will have \$18,540 less in his or her retirement savings account than an equal peer who participated and saved 5% of income immediately.

Of even greater economic consequence, as the total number of 401(k) plan options increase, participating employees increasingly prefer less risky options, even when those options yield lower long-term returns. For every ten funds added to a plan, Iyengar, Jiang, and Kamenica (2006) observed 3.9% and 5.4% increases in contribution allocation to money market funds alone and both money market and bond funds combined, respectively. Allocation to equity funds (the riskier alternative to money market and bond funds) fell by 7.1%–8.9% with every increase of ten options. To expound on the magnitude of these strategies from a long-term perspective, it is necessary only to examine returns from the total stock market, which exceeded those of bond and money markets for any ten-year period in the past 50 years, despite its greater volatility. For example, if an investor invested \$1,000 in a Standard & Poor 500 (equities) index fund, the Vanguard Total Bond Index Fund, and the Vanguard Money Market Fund in 1986, by 2001, the respective totals would have been \$7,063, \$2,849, and \$1,921.

Therefore, the challenge for policy makers is to both encourage employees' initial participation in retirement saving plans and promote more lucrative savings choices. With respect to personal retirement planning, several companies have begun to direct eligible employees' contributions automatically into default retirement savings plans (usually money market or stable value funds; Harris 2003). Madrian and Shea (2001) analyze the consequences in saving behavior among employees of a large U.S. corporation after a change in its 401(k) plan, from an affirmatively elected participation in the plan to an automatic enrollment on hiring with the option to opt out. Making enrollment the default option generated positive effects on saving behavior in that participation in the plan significantly increased.

Moreover, on average, an externally determined default program may yield the typical investor higher expected returns than if allocations were individually chosen. Research that has compared people who invest themselves with professionally managed accounts shows that, on average, managed accounts perform better: According to a study by Watson Wyatt Worldwide, in the ten-year period between 1992 and 2002, "the median return on pension funds held by companies that have also offered self-managed 401(k) plans averaged 6.81% a year compared with 6.35% for the 401(k) accounts" (Lauricella 2004, p. A1). Similarly, a study conducted by the Employee Benefit Research Institute on the mutual fund industry found that despite financial advisors' recommendations that no more than 10% of an investor's assets should be in any one stock, 53% of 401(k) accounts have more than 10% of their assets

in their company's stocks, and more than 10% of accounts had more than 90% of their assets in their company's stocks (Lauricella 2004). Setting the default investment plan as a Standard & Poor 500 index fund is expected to yield even better long-term expected returns.

Although prohibiting choice may be financially beneficial for plan participants, there could be a psychological and social cost of restricting individual choice. Given the peculiarly American cultural glorification of personal choice, such an externally dictated system creates a paternalism within the society, which may provoke negative reactions among people who object to losing their financial autonomy. Even if people accepted such a system in general, it assumes a benevolent guiding hand in investment choices that may not be ever-present.

How, then, can policy makers preserve people's right to personal autonomy while protecting them from becoming debilitated by choice, spurring financially costly decisions? An alternative to the default option could be to create a retirement savings tier system, reconciling an investor's desire for choice with the necessity of greater direction in learning about investment options. Such a system would present menus, which focus principally on core choices, and tier the relative importance of the attendant options while providing an "11th-option" window within the standard limited fund menu. Whereas novice investors could quickly learn about a manageable number of funds, sophisticated investors could access the 11th-option window to explore a wider range of options. Such a system would provide choosers with the ability to both identify and match their investment preferences, even though their range of options is limited.

## Personal Choice and Medical Decision Making

We now consider the equally consequential domain of medical decision making. As with the case of financial decisions, in medical decision making, people are confronted with the dual challenges of deciding what would be most suitable for their future well-being and dealing with information overload (Schneider 1998). The recent rollout by the federal government of the much-anticipated Medicare Prescription Drug Plan makes this challenge particularly evident. At its estimated cost of \$724 billion over ten years, the plan has been considered the biggest expansion of Medicare since its creation in 1965. The plan comprises competing drug discount cards, which cost up to \$30 per year and are offered by several different insurance companies and organizations approved by Medicare. Each card provides different savings on different medications—with monthly premiums ranging from \$1.87 to \$100 and deductibles ranging from \$0 to \$250—and is accepted by different pharmacies. The cards are supposed to provide substantial benefits, such as discounts of 10%–25% for Medicare participants who do not have other prescription drug coverage and much greater savings in reduced premiums and deductibles for low-income people who do not have insurance for prescription drugs (Leland 2004; Pear 2005).

Despite these benefits, however, enrollment in the plan has been slow. In the six months since its inception, only



approximately 1 million of the 42 million Medicare beneficiaries had voluntarily signed up, whereas approximately 11 million have been automatically enrolled by federal officials or Medicare managed care plans (Pear and Freudenheim 2006). This relatively low initial penetration might be due to the choice of the plan appearing to be a daunting task for seniors. In most states, beneficiaries can choose from among more than three dozen different plans. The majority of seniors seem overwhelmed by the choice they are asked to make, as suggested by a survey conducted in late October 2005 by the Kaiser Family Foundation and the Harvard School of Public Health, showing that only 35% of people ages 65 and older said they understood the new drug benefit (in Pear and Freudenheim 2006). More important, information overload may lead to greater dissatisfaction with the choices. A *Wall Street Journal*/NBC News poll in early December 2005 found that 40% of seniors were unfavorable toward the new benefit plan (in Pear and Freudenheim 2006). Confused by the amount and complexity of the information and uncertain about the real benefits of the plan, older people risk being paralyzed by fear of choosing the wrong plan, with the unwanted outcome that many beneficiaries may decide not to enroll at all, as Iyengar, Jiang, and Kamenica (2006) suggest.

The complexity of medical decisions, however, does not stem solely from cognitive overload but also from the high emotional conflicts that patients experience as they confront options that, in general, are all aversive and require trading off emotion-laden attributes. Given the gravity of the decisions and the expertise required in understanding the relevant information about medical decisions, policy makers have long debated whether, in such instances, people should be given the autonomy to choose and how much autonomy should be granted. In the United States, the paradigm that has dominated bioethics over the past 20 years is based on the principle of patients' autonomy. This paradigm represents a dramatic shift from the previous paternalistic approach, which granted physicians the right to decide for their patients, who were judged to be too emotional to do it on their own. The paternalistic practice, which is still adopted to various degrees in many European countries, assumes that physicians choose a course of action in the best interest of the patients after taking into consideration not only technical issues but also patients' personal preferences, such as how risk averse they are and what kind of life they consider worth living (Orfali and Gordon 2004). Affirming the patients' rights for self-determination, the autonomous paradigm implicitly states that personal preferences are more important than technical issues in the decision-making process. In this respect, patients are believed to know their preferred treatment better than anybody else, including the physicians (Gawande 2002; Schneider 1998).

A growing body of evidence, however, suggests that contrary to the principles of the autonomy model, patients are frequently reluctant to decide on their own. Ende and colleagues (1989) conducted a survey that revealed that patients' preferences for decision making are weak and negatively correlated with the severity of the illness; the more severe the illness, the lower is the desire to make personal decisions. This relatively weak preference for the autonomous model has been demonstrated in several other

studies. For example, Sutherland and colleagues (1989) questioned patients in early stages of disease. The results revealed that 63% of the survey respondents believed that their doctors should be the primary decision maker, 27% believed that the decisions should be equally shared, and only 10% believed that they should personally assume a major decision-making role. Furthermore, Vertinsky, Thompson, and Uyeno's (1974) study asked for participants' reactions to a scenario in which a doctor does not inform a patient with strep throat about all the risks involved in either nontreatment or treatment decisions. The results revealed that though participants would have liked to be involved in this decision, they did not consider it important to have complete control over it. Rather, as Lidz and colleagues (1983) show, the vast majority of patients believed that physicians' technical expertise and commitment should alone validate their main role in treatment decisions. Only approximately 10% of the patients believed that they should have an active role in decision making. Research has also found that preference for autonomy is a function of personality variables (Miller, Brody, and Summerton 1988); whereas almost none of the patients interviewed at a department of internal medicine desired to have the final say in their medical care, 36.5% of "high monitors" and 15.9% of "low monitors" desired to play a completely passive role.

Yet evidence suggests that both physicians and the lay public overestimate the extent to which patients would want to be involved in the decisions related to their treatment. Strull, Lo, and Charles (1984) conducted a survey on patients and physicians and found that 47% of patients preferred that clinicians make the therapeutic decision, 19% wished that they could share the decision with the doctor, and only 3% reported a desire to make the decision themselves. However, physicians overestimated the percentage of patients who desired a shared decision-making process (78%) and underestimated the percentage of those who preferred the doctors to choose (22%). Similarly, Degner and Sloan (1992) compared patients who were recently diagnosed with cancer with the general public. The results showed that only 12% of the cancer patients wanted to play an active role in selecting the treatment they would undergo, whereas 59% preferred that the physician make this decision; in contrast, 64% of the general public reported being interested in playing an active role in deciding their treatment if they had cancer.

It could be argued that expertise moderates preference for making choices by reducing the element of information overload that makes such decisions so complex; that is, the more expertise the patients have, the more they may want to be in charge of decisions related to their health. Although expertise could weaken the negative effects of cognitive stress, the emotional conflicts generated from both having to choose among unwanted alternatives and having to trade off emotion-laden attributes still detrimentally affect desire for personal choice. Particularly enlightening in this respect is the testimony of Gawande (2002, p. 221), a doctor who had to choose which treatment his premature daughter would undergo: "When the team of doctors came to talk to me about whether to intubate [his daughter], I wanted them to decide—doctors I had never met before.... The uncertainties were savage, and I could not bear the possibility of mak-

ing the wrong call. Even if I made what I was sure was the right choice for her, I could not live with the guilt if something went wrong.” Thus, even when prior knowledge reduces information overload and the best course of action is easily identifiable, people may prefer eschewing decisions related to health care to avoid the negative emotions associated with feeling responsible for their own misery (Beattie et al. 1994; Botti and McGill 2006; Luce 1998).

The finding that people prefer avoiding choices about health care treatments is relevant in itself from a public policy perspective, especially when opting for a “wait-and-see” approach leads to inferior outcomes relative to any of the available alternatives. However, another potentially interesting aspect of medical decision making is whether patients’ subjective well-being would be negatively affected if they were burdened by having to make their own decision, as the autonomy model requires. It is more challenging to draw policy implications from an analysis of subjective, and usually transient, measures of well-being than from objectively suboptimal and long-term outcomes, such as those that Iyengar, Elwork, and Schwartz (2006) observe. In addition, it could be argued that public policy makers should be interested solely in pursuing objective well-being. If a normative optimal state exists, people should be given the opportunity to obtain that state regardless of the potential subjective pain or pleasure that its achievement may generate.

To supplement the scarce literature on examining the emotional burden associated with having to make an aversive decision among health care treatments, Botti, Iyengar, and Orfali (2006) conducted a series of ethnographic and laboratory studies. These studies compared the autonomous and paternalistic paradigms in the field of infant health care and included data from 32 in-depth interviews with French and American parents of severely ill newborns who, at birth, were given life-sustaining treatments, such as ventilators or feeding tubes. If the condition of these babies did not improve after approximately three weeks, these parents were confronted with the decision of whether to prolong or interrupt their infants’ care. Prolonging care usually results in a higher probability of severe neurological impairments but a lower probability of death, whereas in general, interrupting the care causes the baby’s death. In the cases examined, the babies died after the decision was made to interrupt the treatment; given the same dismal outcome following the same decision, the main difference between the two groups of parents is that the Americans had autonomously decided to interrupt the treatment, whereas the French had the decision made for them by the doctors. The results of this study suggest that at the moment of the interviews, which took place approximately three months after the death of their children, American parents reported more intense negative emotions, such as anger, depression, guilt, and regret, than the French parents. In addition, it took almost twice as long for the American parents than for the French doctors to reach the decision to interrupt the treatment. The role of personal autonomy in this example is debatable. On the one hand, spending twice as much time making the decision gave the American parents an opportunity to fully assess the consequences of the choice presented. On the other hand, the parents’ decision could have been delayed by emotions

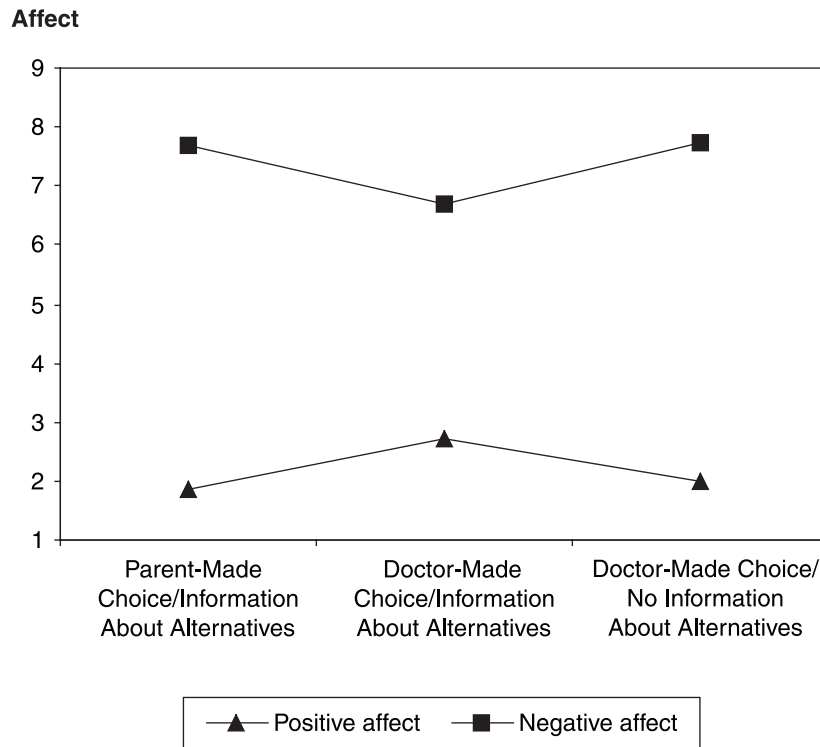
rather than a more rational process, which may have prolonged their baby’s suffering.

A follow-up laboratory study further demonstrated that the act of making a psychologically painful choice affects decision makers’ emotional well-being more negatively than having the same choice externally dictated. This study controlled for variable cultural factors in the previous observational study of choice. For example, it might be the case that the French were always more optimistic than the Americans; more important, it is possible that the different legal context in the two countries affected the results, insofar as Americans’ higher propensity to litigate against medical practitioners generated a less trustworthy doctor–patient relationship. Another study also controlled for the amount and quality of the information provided to the patients by presenting study participants with three different scenarios. Each scenario asked participants to imagine being the parents of a premature baby under life-sustaining treatment and to (1) make a choice to continue or interrupt the treatment after being informed that continuation would result in approximately 40% probability of death and approximately 60% probability of severe neurological impairment, whereas interruption would result in the death of the baby (choice condition); (2) acknowledge the doctor’s decision to interrupt the treatment after being informed of the same probabilities associated with each decision consequence, as in the previous condition (risky, no-choice condition); or (3) acknowledge the doctor’s decision to interrupt the treatment without being informed of the potential consequences of each decision (sure, no-choice condition).

Approximately 70% of participants in the choice condition decided to interrupt the treatment. The emotional responses of these choice participants were compared with those in the two no-choice conditions, in which the same decision was made by the doctors rather than the parents. The results of this study show that when the decision outcome was controlled for, participants in the risky, no-choice condition experienced more positive and less negative emotions as a consequence of the treatment interruption than those in either the choice or the sure, no-choice condition (see Figure 2). Furthermore, participants were ambivalent toward choosing. Whereas choosers were the least happy with their choice-making condition, they were also the least willing to switch to the other conditions when asked to do so. Overall, these results are consistent with several studies in the bioethics literature, showing that though patients may not want to make decisions, they do want to be adequately informed (Ende et al. 1989; Strull, Lo, and Charles 1984); the results are also consistent with the view that providing more information to patients allows them to experience a higher degree of control even in the absence of an actual choice, subsequently improving their psychological welfare (Taylor 1979).

An account based on social and cultural norms could be invoked as an alternative explanation for the results of this laboratory study. Especially in Western countries, cultural norms value autonomy and personal accountability, so that deciding for others might be considered socially undesirable and therefore compel choosers’ more negative emotional responses (Beattie et al. 1994; DeCharms 1968; Iyengar and Lepper 1999). Thus, if the decision outcome were to affect

**Figure 2. Affective Responses to the Decision of Interrupting a Baby's Life-Sustaining Treatment as a Function of Decision Type**



the decision makers directly, participants might express their preference for choosing more clearly merely because of the value associated with self-determination. In addition, it might be that the less positive affect experienced by choosers compared with the equally informed risky nonchoosers resulted from decision makers' inability to engage in preference matching. In the prior study, the preferences of those who would be directly affected by the decision were not known to those who actually decided. However, if these preferences were known to the decision makers and could be matched with the available alternatives, decision makers' well-being would be maximized, as economic theory predicts.

Yet another study that was conducted to address this issue led to results similar to those previously observed. Participants read a description of a situation that was analogous to that of the prior study; however, the decision consequences were to be experienced not by a third party (the premature baby) but by the participant him- or herself. The results showed that approximately 90% of the choosers decided to interrupt the treatment. This sample of choosers was compared with the nonchoosers, who were presented by the doctors with the same decision; risky nonchoosers experienced more positive emotions as a consequence of their choice than both choosers and sure nonchoosers.

Thus, policy makers are confronted with the following dilemma: Should they satisfy the desire for patient input into medical decisions, or should they accommodate the ever-

increasing demand for the exercise of medical authority? As in the case of financial decisions, current theory and research suggests giving defaults to choosers faced with medical decisions. On a national scale, such default programs have potentially enormous benefits. Johnson and Goldstein's (2003) studies demonstrate that automatic enrollments in organ donation programs can improve the health of a country. In countries that adopt a presumed-consent policy for organ donation, in which people are considered, by default, to be donors with the option to opt out, consent rates are much higher (approximately 60%) than in countries that adopt the explicit-consent policy, in which the default state is not to be a donor and the option is to opt in. A follow-up laboratory study consistently demonstrated that when organ donation was the default, the rates of donation increased significantly. Such automatic enrollment programs not only provide the obvious benefit of needed organs to the ill but also make it easier for donor providers to make such a choice without needing to consider the negative emotions associated with the knowledge of certain mortality.

For medical decisions on the individual level, default programs could prove both beneficial and problematic. Decision makers who accept a treatment default option recommended by a trusted agent rather than choose it themselves may experience less negative emotions and improved subjective well-being. Furthermore, by providing a default treatment, potential delays associated with decision making could be lessened; as our findings suggest,

given a best possible choice, parents take much longer than doctors to decide in that alternative's favor. However, it is also possible that in regarding each individual as the prototypical patient without considering specific needs or personal desires, medical decision makers may submit patients to default programs that do not address either their subjective well-being or their potentially unique treatment requirements.

Thus, defaults may be a convenient prescription for issues that are of concern to an entire population, even as they prove more difficult for issues of particular concern to an individual. For specific diagnoses, many questions arise. What exactly is a default treatment option when doctors may have different personal preferences for treating the same ailment? How can the personal needs of the patient be incorporated if they find the default treatment untenable? Can default treatments be wholly accepted given the constraints implicit in any one decision maker's expertise?

There are no easy answers to these questions, because the desire for someone else to make such important decisions is balanced by acknowledgment of the objective reality that external decision makers may also be prone to errors in judgment. First, it is often not entirely clear whether optimal medical decisions exist. Gawande (2002) reports results of several academic studies that show that physicians are as likely as nonexperts to make systematic mistakes in judgment and decision making, such as probability overestimation and overconfidence. Gawande cites (p. 239) David Eddy, a physician expert on medical decision making: "[M]any decisions made by physicians appear to be arbitrary—highly variable, with no obvious explanation. The very disturbing implication is that this arbitrariness represents, for at least some patients, suboptimal or even harmful care." Second, as the Nobel Prize winner Daniel Kahneman (2000) notes, both objective and subjective happiness should be viewed as constituents of human well-being. Thus, public policy makers may want to consider assessing the quality of public decisions by supplementing more conventional objective measures, such as a person's willingness to pay, with measures of a person's subjective experience with a decision outcome (for a discussion of measures of subjective happiness, see Kahneman 2000). Third, policy makers should be interested in understanding whether, given the same outcome, people have better psychological well-being having made the choice leading to that outcome.

## Conclusions

The majority of the studies we presented in this article belong to a nascent body of literature that proposes that decision makers' happiness with the outcomes of their increased choices depends not only on their ability to preference match but also on their social values (Iyengar and Lepper 1999), their mispredicted expectations during the decision process (Kahneman and Snell 1990; Schkade and Kahneman 1998), and their feelings of responsibility associated with the act of choosing (Botti and McGill 2006). Evidence is mounting that subjective and, in several cases, even objective well-being may be negatively affected by choice proliferation; policy makers should consider when and how much choice to give in various public realms, such as social

security, health care treatment, pharmaceutical drug prescriptions, and 401(k) funds, in light of the cognitive and emotional constraints investigated by research in social psychology.

Choice is undoubtedly the bedrock of the culture and values in many countries, most of which have attained their right to choose after long and strenuous battles. However, the presumption that people are never worse off, and are usually better off, as a result of making their own choices may not necessarily be true. Human beings have always shown ambivalence toward being in control. On the one hand, they strive for self-determination and personal causation (DeCharms 1968); on the other hand, they show a tendency to relinquish control and escape freedom (Fromm 1941). This apparent paradox may be better understood if it is considered that in the act of choosing, people are deprived of cognitive and emotional resources. As a consequence, people may need to allocate these resources selectively among choices that are consequential, while relinquishing to others decisions that are less relevant for personal well-being.

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