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Journal of Public Economics 92 (2008) 1795–1810

 JOURNAL OF
 PUBLIC
 ECONOMICS

www.elsevier.com/locate/econbase

Hedonic adaptation and the role of decision and experience utility in public policy

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Received 27 March 2007; received in revised form 12 October 2007; accepted 29 December 2007

Available online 7 January 2008

Abstract

Many economists are becoming supportive of ‘soft’ paternalistic interventions that help people to avoid common decision errors without curtailing individual autonomy. To identify when such interventions could be beneficial, and to assess their success, requires a welfare criterion. However, traditional preference or choice-based criteria cannot serve this function because they assume that whatever people choose makes them better off. An alternative criterion that bases welfare on happiness rather than choice avoids this problem but has several of its own drawbacks. Most notably, people often adapt to serious chronic health conditions, and exhibit high levels of happiness, even though both those with and those without the condition agree that it is much preferable to be healthy. After reviewing different lines of research that shed light on the pros and cons of these alternative welfare criteria, we argue that no simple criterion based on either concept can surmount these problems. Instead, evaluations of welfare will inevitably have to be informed by a combination of both approaches, patched together in a fashion that depends on the specific context.

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Keywords: Behavioral economics; Happiness; Experience utility; Public policy; Quality of life; Medical decision making

I cannot now say whether the man of that time, who I am trying to conjure up here, thought himself as happy as those others did, for now that this experience of mine has made me expect a much fuller and more fulfilled significance in every emotion, I find it almost impossible to assess his happiness in retrospect. But I can say with certainty that I felt myself by no means unhappy at the time, for my wishes almost never went unsatisfied and nothing I required of life was withheld. Stefan Zweig, *Fantastic Night*

1. Introduction: a welfare criterion for public policy

Economists are becoming increasingly interventionist, stimulated in part by advances in behavioral economics, which has identified a variety of situations in which people do not appear to do what is best for themselves. In many cases, these interventions involve encouraging people to do things that they would not do on their own accord. For example, a large number of new interventions are designed to encourage people to save more money — e.g., through

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the use of different default put-asides — motivated by the belief that people do not naturally save as much money as they should. Likewise, attempts by economists and other social scientists to provide people with incentives to take their medications (Volpp et al., 2006), lose weight (Jeffrey, Thompson and Wing, 1978; Jeffrey et al., 1983), stop taking addictive drugs such as heroin, cocaine and cigarettes (e.g., Higgins et al., 2000; Heil et al., 2003), and get better grades (Angrist et al., 2006) all assume these behavioral changes are desirable for people who would not spontaneously enact them if left to their own devices.¹

Clearly, there is a new openness to paternalism among a growing segment of economists. However, wary of abridgments to individual liberties, several proponents of what could be called the “new interventionism” have advanced approaches to paternalism that are designed to obtain the benefits of paternalism while doing as little damage as possible to individual initiative and self-determination. Going by labels such as “libertarian paternalism” (Thaler and Sunstein, 2003) and “asymmetric paternalism” (Camerer et al., 2003), these approaches attempt to retain the ultimate autonomy of the individual while attempting to steer individuals toward courses of action that are seen as advantageous (see Loewenstein and Haisley, 2008, for a recent overview). For example, when governments mandate default options for things like health insurance, retirement plans and the like, people tend to opt for the default option. As a result, when default options differ across states or companies, people make widely different “choices” about what kind of insurance they want, how much to put aside for retirement, and how to invest it (Choi et al., 2004; Madrian and Shea, 2001). The strong preference people show for the default option suggests that more than rational self interest is at work. In response to the influence of such status quo biases, proponents of the new forms of paternalism contend that governments should mandate default options that are, on average, best for their citizens, while retaining the right of individuals to choose any alternative they like.

Although economists are increasingly embracing paternalistic policies, and attempting to use insights from psychology to implement them most effectively, existing measures of welfare fail to provide an adequate criterion by which to judge such efforts. For example, some policies encourage people to make sacrifices in order to lose weight, save money or adhere to medical regimens. Are these sacrifices warranted by the benefits such changes in behavior yield? How can we evaluate whether individuals who become obese, fail to save for retirement or take beneficial medications are making decisions that are not in their own best interests, or whether policies that help them to do so improve welfare?

Better measures of welfare would also help policy makers to make more rational, efficient policy tradeoffs. How much should be spent on heart transplants versus insulin shots? How much should home-owners be compensated for the construction of an airport runway near their property? What is the appropriate balance between inflation and unemployment? Existing strategies for measuring welfare in these situations, such as contingent valuation (Diamond and Hausman, 1994) and hedonic pricing (Rosen, 1974) are notoriously problematic. In the absence of an agreed upon welfare criterion, questions of this type will be left to the exigencies of a political process that is rife with biases and inefficiencies.²

In part because this paper is a collaboration between a physician and a behavioral economist with interests in medicine, and in part because of the importance of health care in the economy, much of the research we review and the examples we discuss involve health care. The widespread perception that the United States spends too much on health care has led to myriad calls for restricting health care spending. However, there is little consensus about what cuts should be made, and there are many politically influential groups, such as physician associations and insurance companies, with economic interests that are imperfectly aligned with those of the general public. If some form of rationing were to be implemented, what form would it take? All attempts to make such decisions in a manner that is protected from the exigencies of the political process involve some form of measurement of the desirability of different medical states. But many different measures are possible, some of which implicitly rely on notions of decision utility and others which rely on notions of experience utility.³

¹ Attempts to encourage people to “move to opportunity” by providing them with housing vouchers that can only be used in affluent neighborhoods, similarly assume that if no conditions were attached, people would not use such vouchers to live in neighborhoods that were most advantageous to them.

² These include the power of special interests, the susceptibility of the electorate to symbolic ‘hot-button issues’ often combined with an indifference to issues of substantive importance, the short-sighted perspective induced by short terms of office, problems caused by district gerrymandering, and a long list of other problems.

³ For example, in Great Britain, decisions about whether to pay for new pharmaceutical products are based on cost-effectiveness analyses (Walley et al., 2005), which are in turn informed by measures of decision utility, in which members of the general public indicate how much money or time they would give up to rid themselves of the health conditions alleviated by the drugs in question (Ubel, 2000). Such decision utility measures will be flawed if, as we have argued (Ubel et al., 2003), they are influenced by mispredictions about what life would be like with the hypothetical health conditions being evaluated, or by decision heuristics that, for example, place an unwarranted premium on saving lives versus bringing smaller but more widely distributed benefits (Ubel et al., 1996).

In this paper, we provide a perspective on the pros and cons of the two most commonly advocated welfare criteria, the conventional one used by economists that is based on ordinal utility and choice, and another, based on Kahneman's notion of "experience utility," which is a revival of the original, hedonic, conception of utility first proposed by Bentham.

Kahneman's proposal to return "back to Bentham" (as he expressed it in the title of an important 1997 paper) was based, in part, on frustration with the limits of choice-based utility as an index of welfare. As Kahneman pointed out, preference- or choice-based conceptions of utility cannot be used to *judge* the optimality of behavior because they *assume* it — they assume that whatever people do maximizes their welfare. However, if we equate welfare with experience utility, thereby distinguishing it from choice-based or, "decision utility," it should, at least in principle, be possible to assess whether people's choices actually maximize their own (experience) utility. A significant number of studies have shown, subsequently, that people's choices do not always maximize experience utility. Consequently, Kahneman has proposed experience utility as an alternative welfare criterion for public policy.

As we discuss in Section 2, we share Kahneman's misgivings about notions of welfare that uncritically accept what people choose as the normative standard for public policy. Standard notions of welfare, based on individual choice, are clearly inadequate for guiding public policy, because they assume by definition that any effort to give people something other than what they would naturally obtain for themselves would detract from welfare. If people's decisions frequently fail to maximize their welfare because they are based on mispredictions of the consequences of behavior or result from impulsive, short-sighted choices, then a notion of welfare which assumes that people always do what is best for themselves does not make sense. Clearly, the notion of welfare guiding public policy should not be based on such flawed "preferences."

However, as we argue in Section 3, experience utility has its own problems as a welfare criterion for public policy. Chief among these is its failure to sufficiently value negative or positive outcomes that people adapt to emotionally. It is well documented that people exhibit near-normal levels of happiness not long after experiencing adverse outcomes such as paraplegia, colostomy or end-stage kidney disease. Yet, the same people often report a willingness to make great sacrifices to alleviate their condition. A welfare criterion based on experience utility would run the risk of failing to treat such outcomes as welfare-diminishing — e.g., of treating an increase in cases of paraplegia as a welfare-neutral event.

It could, of course, be argued that the problem is not with the notion of Benthamite utility itself, but with our means of measuring it — e.g., that, if measured appropriately, paraplegia would be revealed, in fact, to decrease happiness substantially. Indeed, as we discuss in Section 4, there are serious problems associated with existing measures of happiness. However, measurement problems are not the fundamental barrier to using experience utility as a welfare criterion. Rather, as discussed in Section 5, the main problem with experience utility is its failure to incorporate non-hedonic aspects of experience, such as meaning and capabilities (even if such capabilities are not used) that are important to people but have little impact on their subjective happiness.

Given the limitations of measures of welfare based either on decision utility or on experience utility, is there any hope for coming up with a normatively compelling welfare criterion? In Section 6, we argue that no simple criterion based on either concept can surmount these problems. Instead, evaluations of welfare will inevitably have to be informed by a combination of both approaches, patched together in a fashion that will depend on the specific context.

2. The rationale for a Benthamite conception of welfare

For at least a century after Jeremy Bentham published the *Principles of Morals and Legislation*, many philosophers and economists held the opinion that the goal of public policy should be to maximize *utility*, which was taken to be commensurate with happiness. Bentham envisioned a day when social scientists could measure people's moment to moment pleasure and pain, in order to assess the impact, and hence desirability of alternative public policies. However, the Benthamite notion of utility lost popularity in economics in the early 20th century, due in part to the inability to measure happiness and in part to a lack of faith that people actually were maximizing happiness (Lewin, 1996; Loewenstein, 1992; Bruni and Sugden, 2007). Eventually replacing it was the concept of ordinal utility — utility as an ordinal index of preferences — that could, Samuelson subsequently argued, be inferred from the preferences *revealed* by an individual's choices.

Transforming the concept of utility into an index of preference stripped it of plausibly invalid psychology — most importantly the questionable assumption that human behavior can be understood as an effort to maximize happiness — but it weakened the ability of economists to evaluate the welfare of alternative policies in a number of ways (see, e.g., Little, 1950).

First, whereas Bentham's cardinal utility offered a way, at least in principle, to judge the strength of preferences — and hence the value of a shift from one regime to another — ordinal utility only allowed for a ranking of different

situations at the individual level (although, as von Neumann and Morgenstern pointed out in 1944, this problem can be circumvented, in part, by examining choice under conditions of risk).

Second, when it comes to issues of equity, ordinal utility does not permit, even in principle, an evaluation of the relative desirability of different distributions of resources between persons — an issue of growing importance in an age of increasing income inequality. Although interpersonal comparisons of Benthamite utility were acknowledged to be difficult, the Benthamite utility concept could at least, in principle, be applied to judging the impact of income inequality on total utility (Lerner, 1944). Notions of welfare based on ordinal utility, such as the Pareto criterion or the Hicks–Kaldor criterion, are, in contrast, either extremely conservative or silent when it comes to issues of distribution.

Third, preferences often change over time, due to, for example, prior consumption or maturation, and people often take actions to alter their own preferences. A concept of welfare based on preference has difficulty evaluating welfare in a situation of changing preferences, without privileging some preferences over others.

With the entry of behavioral economics, moreover, new problems with conceptions of welfare based on ordinal utility and revealed preference became apparent, and along with them, new advantages of the earlier utility concept. Concepts of welfare based on ordinal utility assume, at a minimum, that an individual is better off if his or her preferences are satisfied. However, behavioral economists have identified myriad ways in which people take actions that are patently contrary to their own interests. For example, in the “heat of the moment”, people often take actions that they would not have intended to take and that they soon come to regret (Loewenstein, 1996). Other research showed that people systematically mispredict what makes them happy, raising the question of whether choices might be based on misinformation and distorted by systematic biases (Gilbert and Wilson, 2000; Loewenstein et al., 2003). Indeed, by identifying phenomena such as framing effects, preference reversals, loss aversion and non-linear probability weighting, much if not most of the field of behavioral decision research could be viewed as identifying cognitive and emotional barriers to the pursuit of self interest. With a concept of ordinal utility that equates welfare with choice, actions that are taken in the heat of the moment based on mispredictions of hedonic consequences, or on any other kind of mistake, are interpreted, by definition, as welfare enhancing.

Based on many of these considerations, Kahneman (1999, 2000a, 2000b; Kahneman et al., 1997) proposes that public policy should be guided by a consideration of Benthamite experience utility rather than preference-based decision utility, a perspective that has gained many followers.⁴ Layard (2005), for example, argues that maximizing happiness rather than income should be the goal of government policy. Others have argued that happiness data — i.e., experience utility — could be used to guide government policy in identifying the appropriate societal preferences for tradeoffs between, for example, inflation and unemployment (Di Tella et al., 2001) or between money and airport noise (van Praag and Baarsma, 2005).

Such a move could, at least in principle, solve many of the problems just enumerated. For example, a notion of welfare based on experience utility could indicate a decline of utility when people, for whatever reason, choose actions that make them worse off. A notion of welfare based on experience utility could also avoid problems caused by changing preferences by providing an index of well-being that permits comparisons across different preference orderings — e.g., that evaluates an addict as being worse off than a non-addict because addicts have preferences that make them less happy than those who are not addicted.

Along with these diverse justifications for the desirability of experience utility came new hope that some of its limitations might be addressed. In addition to advocating a return to Bentham, Kahneman also began wide-ranging research to develop a hedonic measure of utility that could provide an alternative to choice-based measures — an alternative which he saw as playing a central role in public policy. Stimulated, in part, by Kahneman's forays into the topic, a new legion of psychologists and economists began conducting research on happiness, economists who were already studying happiness gained new prominence, and increasing numbers of survey researchers began to include measures of happiness in their surveys. This research has yielded a number of interesting findings dealing with the impact (and in some cases lack of impact) of various factors on happiness (see, e.g., Layard, 2005; Blanchflower and Oswald, 2004; Diener, 1984; Diener and Biswas-Diener, 2002; Frey and Stutzer, 2002; Smith et al., 2005).

⁴ Kahneman and Krueger (2006) have advocated the creation of an index of national well-being to complement traditional measures of national income, arguing that the act of quantifying such an index will encourage policy members to pursue the goal of promoting national well-being. Indeed, one country, Bhutan, has developed an index of gross national happiness (GNH, as opposed to GNP) with the goal of putting “the well-being of individuals on the top of the national development agenda” (see www.grossinternationalhappiness.org).

3. Flaws of experience utility revealed by emotional adaptation

Despite the advantages of experience utility as a welfare criterion, there are reasons to be cautious about reviving Benthamite utility. Some of the most serious problems associated with a welfare criterion based on experience utility are highlighted by a consideration of issues raised by the phenomenon of hedonic adaptation.

One of the most ubiquitous findings in research on happiness is that major life events often have a surprisingly small impact on measured happiness (e.g., Frederick and Loewenstein, 1999; Loewenstein and Schkade, 1999; Gilbert et al., 2002; Gilbert et al., 1998). For example, numerous studies have found that people with chronic health conditions as severe as kidney failure or paraplegia report moods that are relatively close to those reported by healthy persons, and that are much better than healthy people believe their moods would be if they had those conditions (Brickman et al., 1978; Riis et al., 2005; Ubel et al., 2005b). Although hedonic adaptation to circumstances is neither universal nor complete (Lucas, 2005), it is a strong enough phenomenon that most circumstances have a much smaller influence on well-being than do factors such as genetic inheritance (Tellegen et al., 1988).

These findings should raise serious doubts about the desirability of basing policy solely on experience utility. Most people agree that kidney failure and paraplegia are highly undesirable outcomes, and that life with the use of one's kidneys or limbs is superior to life without their use, yet measures of welfare based on experience utility would give very little negative value to these patently undesirable conditions. If we based public policy on experience utility, we might avoid spending scarce public resources on measures to prevent adversities like leg amputations, spinal cord injuries, and kidney failure which most people would be very averse to experiencing but which lead, for most people, to significant emotional adaptation.

Not only do such policy implications conflict with common intuitions and values, but, despite reporting levels of mood and well-being that are similar to healthy persons, people experiencing these conditions report a willingness to pay large sums of money or make other major sacrifices to restore their lost function. In our own research examining different measures of utility for different medical conditions, we have repeatedly found striking divergences between measures based on experience utility and those based on decision utility. In one representative project, we elicited preferences for reversal of colostomy from colostomy patients using a decision-based method called the "time tradeoff". We asked the colostomy patients to imagine they had 10 years (i.e., 120 months) to live, and then asked them how much of that time they would give up to live the remainder of their lives with normal bowel function (i.e., no colostomy). The median response was 18 months. Thus, despite experiencing moods similar to people without colostomies, they were willing to give up 15% of their projected life span to rid themselves of a colostomy (Smith et al., 2006a). Studies of dialysis patients have similarly demonstrated that many are willing to give up over half their remaining years to have normal kidney function again (Torrance, 1976). All of these patients report normal levels of happiness, but report a willingness to make enormous sacrifices to return to normal health, suggesting that people with disabilities have a strong desire to be healthy, even if they experience normal levels of happiness. In Section 5 we propose that this is the case because people care about aspects of their life that are not captured by current measures of experience utility.

Further evidence for the idea that people have a strong desire to be healthy, apart from the impact of health on happiness, comes from a study we conducted to test whether failure to consider adaptation leads people to mispredict the impact of disabilities on quality of life. We developed an *adaptation exercise*, in which we asked people to reflect on good and bad events from earlier in their lives and think about whether their emotions got stronger or weaker over time and whether their long-term emotional reaction to the events was larger or smaller than they would have predicted. When people thought through this adaptation exercise, their beliefs about the quality of life of living with paraplegia or a below the knee amputation, measured on a 0 to 100 quality of life rating scale, increased (Ubel et al., 2005). The impact of this intervention suggests that people mispredict the experience utility of life with a disability in part because they fail to adequately consider emotional adaptation. Intrigued by this result, we tested how the adaptation exercise would influence two measures of decision utility: the standard gamble (SG, which examines what probability of death an individual would risk to eliminate the disability and restore normal health) and time tradeoff (TTO; explained above). We asked participants to evaluate one of four health conditions — paraplegia, colostomy, below the knee amputation or chronic pain. We randomized participants in a 2×2 design: (1) utility elicitation: SG versus TTO and (2) utility elicitation with versus without first undergoing our adaptation exercise. Although our adaptation exercise helped people to recognize that they would be relatively happy if they had the health conditions, it has *no significant effect* on either measure (the SG or TTO) of decision utility for any of the four health conditions (Damschroder et al., in

press). Even when people recognize their ability to adapt emotionally to chronic disability, it seems, they are still willing to make substantial sacrifices to avoid experiencing disability themselves.

In sum, although people may be able to emotionally adapt to a wide range of positive and negative circumstances, that does not mean they do not care about what circumstances they are going to experience. The existence of emotional adaptation, therefore, raises serious questions about whether the goal of policies should be to maximize experience utility.

4. What about better measures of experience utility?

One possible defense for the use of experience utility, at least in principle, is that current measures of experience utility are flawed. Perhaps, for example, people with paraplegia really *are* miserable, but, due to problems of measurement, this misery is not manifested in measures of experience utility. If so, whereas existing measures may not provide a suitable basis for public policy, improved versions that are not subject to these flaws might well do so.

One problem with current measures might be that people with disabilities are motivated to provide exaggerated reports of their own well-being.⁵ When asked how their illness influences their happiness, they may want to put up a good front, downplaying any negative impact of their illness. However, we tested for such a problem and were unable to find it. We conducted a telephone survey in which we called people with Parkinson's disease and asked them to report on their overall life satisfaction. We randomized participants so that half of them were told that they were receiving a call from the Movement Disorders Clinic where they received care. The other half were told that they were simply receiving a call from researchers at a local university, who were calling people in the area to find out about their life satisfaction (Smith et al., 2006b). People in this second group were unaware when they answered the life satisfaction questions that we knew about their Parkinson's disease. We wondered whether patients, when surveyed in the context of a health-related study, would exaggerate their overall well-being. But we found no difference in the overall life satisfaction of these two groups. Even when patients were unaware that they were being surveyed to find out about the effects of their illness on their well-being, they reported high levels of life satisfaction.⁶

A second problem with some measures of well-being is that they are unduly susceptible to fluctuations of moment to moment mood. Although many measures of well-being are intended to elicit global assessments of happiness using questions such as "In general, how satisfied would you say you are with your life?," such measures are notoriously susceptible to momentary mood effects. People report greater global happiness on sunny days versus rainy days or when finding a dime on a copy machine before filling out a questionnaire (Schwarz and Strack, 1991). It would be difficult to make the case that these momentary fluctuations warrant inclusion in a global measure of a person's happiness. Problems of this type raise questions about whether we can trust research that uses such global measures to document adaptation. However, we have documented the same patterns of adaptation and under-prediction of adaptation when we elicited momentary rather than global measures of well-being (Riis et al., 2005). We measured the moment to moment mood of healthy people and dialysis patients over the course of one week using PDAs programmed to beep at random intervals throughout the day. We found only small differences in the level of positive and negative mood recorded by the two groups over the course of the week. Our study provided new evidence that dialysis patients truly experience a significant amount of emotional adaptation to their illness. Undergoing kidney dialysis had only small effects on people's moment to moment experience utility.

A third, and perhaps the most serious, problem with subjective reports of experience utility has to do with people's tendency to automatically normalize their responses to questions they are asked based on implicit standards of comparison (Kahneman and Miller, 1986). In the domain of disability, for example, people who have experienced a decline in functioning might either norm their responses relative to others with the same disability or relative to the worst moments they have experienced — e.g., in the interval right after onset of the disability. More generally, changes in an individual's circumstances might lead to systematic changes in the way people interpret subjective assessments of their well-being.

⁵ One could, however, equally easily imagine reasons why people might be motivated to exaggerate the misery of an affliction.

⁶ Of note, we verified that our survey introduction did influence patients' responses. After asking patients about their overall life satisfaction, we asked them about their overall health satisfaction. We found a significantly higher correlation among those receiving a call from the Movement Disorders Clinic, suggesting that those respondents were, indeed, thinking more about their Parkinson's disease when reporting on their overall life satisfaction. However, thinking about their illness did not influence their mean level of life satisfaction.

We have conducted a series of studies exploring scale recalibration using several novel methods and have found evidence that scale recalibration does, in fact, lead to bias of the type just postulated. For example, older people interpret “perfect health” differently than young people, and thereby report experiencing less decline in health than they would if they were not prone to such scale recalibration (Ubel et al., 2005a). However, even after controlling for such scale recalibration, we still found strong evidence that people’s predictions are often at odds with their eventual experience (Lacey et al., *working paper*). To account for scale recalibration, we asked patients and non-patients to rate the quality of life associated with one of two health conditions: diabetes requiring insulin and emphysema causing shortness of breath. We found, as expected, that people with diabetes and emphysema rated the quality of life associated with these conditions as higher than did healthy people. The question then, is whether their higher ratings merely reflect scale recalibration.

To answer this question we asked participants, prior to rating the illness in question, to rate 26 other circumstances including a mixture of health problems and non-health problems such as dandruff, a long commute, an unpleasant boss, and quadriplegia. By rating the quality of life of these 26 items (on a 0 to 100 scale), we could test whether patients and non-patients were using the scale differently from each other. For example, we could test whether patients with diabetes not only gave a higher score to diabetes than did healthy people, but whether they also gave a higher score to other adverse circumstances. Such a result would indicate that patients had shifted their way of using the 0 to 100 scale. However, we did not find that patients used the scale differently than non-patients. Moreover, we found that patients ranked their condition as being less severe relative to the other circumstances, a pattern that cannot be attributed to scale norming.

The data we have collected in these and other studies, leads us to conclude that the surprising emotional stability people show across a wide range of circumstances reflects true adaptation to those circumstances and is not a mere result of response bias or scale recalibration. Hence, the problems adaptation raises for those who want to base policies on experience utility cannot be solved by simply improving measures of experience utility.

5. Does experience utility measure the right kind of experience?

So far, in agreement with Kahneman and others, we have argued that decision utility measures are seriously flawed and that the problems associated with measuring experience utility are problematic, but not beyond redemption. A lot of effort is going into developing superior measures of experience utility, and these efforts are paying off. Thus, for example, Kahneman et al. (2004) have developed a “day reconstruction method” (DRM) that collects reports on people’s affect across portions of their days, that is inexpensive to collect, and that appears to have desirable psychometric properties. Indeed, such measures have strengthened our confidence that people have great ability to adapt to a wide range of positive and negative circumstances.

However, even if all of the existing problems with measuring experience utility were to be solved, experience utility would still, we believe, have fatal flaws as a unitary measure of welfare used to formulate public policy. The problem is that experience utility fails to capture a wide range of dimensions of existence that people deeply and legitimately care about. Policies based on such measures would ignore these aspects of life if those policies did not lead to changes in positive or negative affect.

5.1. *Non-affective components of well-being*

Debates about what kind of emotional experiences belong in measurements of utility have existed since the time of John Stuart Mill, who followed up on Bentham’s theory of utility by espousing a theory of higher and lower pleasures and asked famously whether it is better to be a dissatisfied human than a happy pig. Mill argued that maximizing people’s happiness should not be the sole goal of policy, but that policies should be directed towards helping people to achieve higher pleasures. Mill’s view is echoed in more contemporary philosophical views of well-being. Raz (1994), for example, defines well-being as “the whole-hearted and successful pursuit of valuable activities,” and goes on to argue that not all activities are equally valuable.

What constitutes high and low pleasures is, of course, a matter of debate, but it is difficult to dismiss the possibility that there are valued dimensions of experience that are not captured by measures of moment to moment mood. For example, a wine connoisseur may find that she experiences less pleasure from the typical glass of wine than does a wine novice and greater pleasure only from very fine bottles of wine. Given the prevalence of good and bad wines it is not

clear that the wine connoisseur has maximized pleasure by developing such refined taste. However, the connoisseur has added dimensions to the experience of drinking wine that are unavailable to the wine amateur. The same phenomenon can surely be applied to music aficionados and movie critics. Each of these groups is less impressed by the typical concert or the typical movie than the average person. However, we suspect that most would not choose to reprogram themselves back to their original state, in which they were happy with less intelligent fare, because the cost of such happiness would be to abandon their ability to appreciate nuances of the experience. Indeed, when racked with pain from illness, Sigmund Freud refused to take any medicine stronger than aspirin, saying: “I prefer to think in torment than not to be able to think clearly” (quoted in Griffin 1986, p.8). If ignorance truly were bliss, how many of us would choose a life of ignorance? Existing measures of experience fail to incorporate this dimension of experience.

5.2. Range of feeling

In *Madame Bovary*, Gustave Flaubert (1857/1992) wrote of the boredom of his eponymous protagonist:

“Down in her soul, the while, she was waiting for something to happen. Like a shipwrecked sailor, she perused her solitary world with hopeless eyes, searching for some white sail far away where the horizon turns to mist. She didn’t know what her luck might bring, what wind would blow it her way, what shores it would take her to, whether it was a sloop or a three-masted schooner, laden with anguish or crammed to the portholes with happiness. But, every morning, when she awoke, she hoped it would happen that day...”

What is surprising about the passage is its implication that Bovary desired change, whether it brought happiness or anguish. Part of being alive is to experience a range of emotions. What Madame Bovary wanted, therefore, was to “feel alive.”

Although child-rearing did not serve such a purpose for Madame Bovary, it is possible that it does for many parents. Studies of experience utility show that raising young children is not a recipe for moment to moment happiness. Marital satisfaction typically declines when there are toddlers in the house (Argyle, 1999), and people report being happier grocery shopping than spending time with their children (Kahneman et al., 2004). But having children influences many types of experience in ways that are not captured by current experience utility measures. While diminishing one’s average happiness, perhaps, raising children increases the intensity and variance of emotions, potentially making one feel *more alive*.

5.3. Meaning

In addition to cognitive dimensions of well-being that are not captured by happiness measures, people may also care about the meaning that they derive from activities. The search for meaning can give rise to behaviors that decrease experience utility but that could still be justifiable for someone who cared about meaning. Exactly what is meant by meaning, however, is admittedly ambiguous. In an article on the economics of meaning, Karlsson et al. (2004) propose four possible categories of meaning. First, meaning could be understood as a resolution of uncertain preferences (e.g., finding out what is important — what *really* matters). For example, one might seek out activities that one does not enjoy for the sake of gaining information about one’s preferences — e.g., one might suspect that swing-dancing will not be enjoyable, but will give it a try on the off-chance of being pleasantly surprised. This type of meaning does not create many problems for the idea of experience utility. Part of maximizing one’s experience utility may be to take risks that provide one with new information.

Second, meaning could be understood as an extension of oneself either socially or temporally, perhaps to combat the feeling that one’s existence is inconsequential. For example, an academic one might toil miserably in the hopes of leaving behind some great piece of work for later generations to discover. Third, meaning could be understood as an assertion of free will. For example, one might, as Dostoyevsky suggested in *Notes from the Underground*, do something that makes one miserable simply to demonstrate that one has free will. As he expressed through the words of his protagonist, a person “may purposely, consciously, desire what is injurious for himself, what is stupid, very stupid — simply in order to have the right to desire for himself even what is very stupid and not to be bound by any obligation to desire what is only rational” (quoted in Karlsson et al., 2004:26). These two categories of meaning raise serious problems for policies based on maximizing experience utility. People may not want to maximize their moods, but may instead pursue other goals. In these cases, the values revealed by individuals’ choices may deserve more weight than their moment to moment moods.

A fourth category of meaning may, however, pose the most significant challenge to the claim that people should maximize the sum of lifetime happiness. People often construct stories about their lives. These stories are not just retrospective acts of sense-making, but also guide people's actions. As Bruner (1987) notes, "the self-telling of life narratives achieve the power to structure perceptual experience, to organize memory, to segment and purpose-build the very 'events' of a life. In the end, we become the autobiographical narratives by which we 'tell about' our lives" (1987:15; see also, Bruner, 1990, 2002).

The stories that people tell about themselves rarely conform to what one might expect if people were attempting to maximize experience utility — i.e., "I was happy as much of the time as I possibly could have been given the opportunities that I faced." Rather, a good life story typically involves crises and setbacks that are, hopefully, overcome (Fredrickson, 2000; McAdams et al., 1997; Wilson and Ross, 2001). Of course, just because people construct a story about their lives, and even attempt to fit their lives to the story, that does not mean that it is sensible to do so. Perhaps it is only a self-indulgent sentimental conceit to think that a less happy life that constituted a good story might be one more worth living than a happier, but less eventful alternative. But, who is in a position to argue that maximizing the integral of happiness is a more suitable goal than any other goal one might choose?

In fact, in prior research Loewenstein and his colleagues (Bryce et al., 2004) have found that people care a lot about dying a "good death." They measured concern about quality of death by presenting subjects with scenarios that described the final month of life of two patients. One of the two patients, "patient A" experienced adverse outcomes in 4 domains: pain; empowerment to control daily surroundings; participation in treatment decisions; and support for family members. The comparison patients, patients B through E, experienced improvements in each individual domain, and comparison patient F experienced improvements in all domains. In all scenarios, patient A lived to age 70, and both patients died after 30 days in the ICU. The task presented to subjects, by computer, was to downwardly adjust the length of life of each of the 5 comparison patients until the subject deemed that the overall quality of life (taking account of both quality and length) was equivalent for both patients. Supporting the researchers' expectation that quality of end of life (EOL) care would be highly valued, three-fourths of respondents were prepared to shorten healthy life for better EOL care in at least 1 scenario. The improvement in conditions applied only to the last month of the patient's life, but the amount of time people were willing to trade for improved quality often exceeded a month — suggesting that dying a high quality death has value over and above the increase in well-being it confers during the interval it is experienced. The median time traded was 7.2–7.7 months for improvements in specific domains, and 8.3 months for improvements in all domains. In the subset willing to trade any length of life for improved quality of death, the median was 9.6–11.4 months for individual domains and 24.0 months for all domains. That most respondents expressed a willingness to trade substantial durations of healthy life for a better end of life, challenges the assumption that overall quality of life can be measured as the integral of momentary quality of life over time. People may, in fact, care about "gestalt" characteristics of life not captured by momentary utility ratings (Ariely and Carmon, 2000). Dying surrounded by friends and family could be extremely important to people, even though it occurs over a short period of time and will not be remembered, at least by the individual in question.

5.4. Capabilities

Returning to the dialysis study described above, let us imagine for the purpose of argument that kidney failure really does not affect people's overall moods. There are still many reasons people would give up a lot in order to avoid experiencing kidney failure. Illness and disability reduce people's ability to pursue many activities. People care about the opportunity range available to them in their lives, even if they are able to emotionally adapt to a narrow range of opportunities. It is plausible to think that one goal of public policy ought to be to maximize people's opportunity range (Daniels, 1985). Indeed Sen (1985) and Nussbaum (2000) have argued for exactly such a welfare criterion based on Sen's concept of "capabilities," which are desiderata that are perceived as universal and virtually incontrovertible.

5.5. Brief episodes

Consider another situation, the loss of a loved one who dies at a young age. Such a loss clearly has long-term emotional effects on survivors. Yet for many survivors, the emotional effects of such a loss will be intense for a

relatively short period of time, and then have very little influence on their average mood. The main long-term manifestation is likely to be momentary — spikes of grief that may strike on any given day — which existing measures of experience utility, including experience sampling methods, are unlikely to pick up on. But that does not mean that these people's lives have been unaffected by the loss of a loved one. In capturing their own experience, there is more at stake here than moment to moment moods. How do we credit brief episodes of grief that persist in these people's lives? How do we give adequate weight to the strong salience of those brief emotions that occur over the years?

5.6. *Altruistic and moral considerations*

Another category of considerations that are often important to people but are unlikely to be fully captured by measures of happiness, is actions based on principle or on consideration for the welfare of others. Motivated by a sense of responsibility or love for others, people often take actions that produce states of ongoing stress and misery, such as caring for sick loved ones or remaining in a loveless marriage for the benefit of children. It could be argued, of course, that such actions *must be* making the individuals who take them happy; otherwise they would not be taken. But such an argument renders the equality between experience utility and altruistic actions a matter of definition rather than a testable (and, in fact we suspect, easily refutable) hypothesis. Alternatively, and more difficult to dismiss, it could be conjectured that, while taking these actions may make people unhappy, the failure to take these actions would render them even more miserable. Although we are skeptical of such an argument, we are not aware of any empirical evidence that challenges it.

5.7. *Summary*

In this section we have argued that a major — indeed perhaps fatal — problem with experience utility is its failure to incorporate dimensions of experience other than simple happiness that people justifiably care about. To some extent, we may be able to overcome these flaws by expanding and improving the measures we include as part of experience utility. It is theoretically possible to capture people's experience of meaning and purpose in their lives, independent from their moment to moment affect. But we expect that this will not address all the problems we have raised with experience utility. Instead, we believe that there are circumstances that matter to people independent of their influence on moment to moment experience. Despite other patent flaws, decision utility has the advantage of capturing these values in a way that experience utility does not — e.g., if an individual cares about meaning, he or she can incorporate that concern into their choices.

6. **Decision utility, experience utility and public policy**

The goal of policies ought to be to maximize people's well-being, whether that entails maximizing moment to moment experience utility or satisfying other goals that people might have. However, as we discussed in Section 2, this goal will not be achieved merely by crafting public policy to maximize freedom of choice, or by creating public finance mechanisms (taxation, government spending and regulation) that give people the maximum amount of what they would naturally want for themselves. People are susceptible to a wide range of decision biases that make it difficult for them to integrate information relevant to their choices. To the extent that doing so is avoidable, embodying such mistakes in public policy is clearly a mistake.

However, the strongly paternalistic alternative of giving people what researchers find makes them happy is also clearly a mistake. Such a policy ignores the problems raised by the phenomenon of hedonic adaptation, and fails to incorporate important human values that are not perfectly related to happiness. Given these serious problems with welfare criteria based on either decision or experience utility, is there any hope for producing a metric for guiding public policy? A failure to do so inevitably means that public policy choices will be made by the political process, which has its own, probably even more serious, problems. Given that neither decision utility nor experience utility are adequate welfare criteria, what criterion or criteria should policy makers rely on when making policy decisions?

To this one question, we propose two answers — two because there are two major situations in which having a welfare criterion would be helpful for public policy. One is when government regulations affect the behavior of

individuals. For example, different government policies affect how much individuals save for retirement. The desirability of such policies will depend on how much we think people should be saving for retirement, a judgment that is difficult to make in the absence of any kind of welfare criterion. The other has to do with the myriad tradeoffs that governments make between competing objectives, and often (when it comes to decisions about taxation and spending) between those objectives and the personal income of the citizenry. These tradeoffs operate at *a level higher than any individual*. For example, governments must decide how much money to spend on health care versus education versus other social programs. While their decisions ultimately affect individuals, their primary influence is on a larger scale. Although the distinction between these two situations is not entirely crisp (for example, many efforts to induce people to save have ramifications for aggregate taxation and spending), we believe it is a useful one for distinguishing between two different approaches to reconciling the discrepancy between welfare criteria based on decision utility and experience utility.

6.1. Policies that affect individual behavior: soft paternalism

As noted in the Introduction, new forms of “light” paternalism that have been proposed, and in some cases implemented, involve attempting to propel individual behavior in desirable directions without limiting individual autonomy. But, given the problems with experience utility and decision utility just discussed, what criteria should policy makers use to evaluate when light paternalistic interventions are warranted and what types of behaviors they should encourage?

6.1.1. Pruned decision utility

One approach, advocated by [Bernheim and Rangel \(2008\)](#), is to base judgments of welfare on choice — i.e., revealed preference — but to exclude choices where there is evidence from psychology or neuroscience showing that there was a malfunction of sensory, informational, or computational brain processes at the time of choice. For example, suppose that immediately after satisfying his craving for alcohol, an alcoholic expresses a desire to be deprived of the future opportunity to drink, but as craving returns, the individual expresses a strong desire for a drink. If one could demonstrate that the alcoholic’s thinking processes were distorted by craving, one might argue that we should honor the earlier, satiated, alcoholic’s stated preference for being denied access to alcohol. Based on decision utility, such an approach seems to have the advantage of avoiding the kind of strong paternalism associated with approaches based on experience utility.

Although this approach might make sense in principle, at present it is not very practical. Currently we lack — and it is debatable whether we will ever achieve — the ability to understand whether a particular neural process represents a malfunction. Suppose, for example, that a couple is determined to use protection while having sex but, in the heat of the moment, ends up failing to use it. If we could examine the brain waves of each partner while they were having sex, would it be possible to determine whether the sudden reversal of preference was caused by a neural malfunction of some type? The impediments to making such an evaluation are daunting. In practice, we suspect, an approach that attempts to incorporate neural data will end up involving a heavy dose of subjective judgment about which decisions should or should not be treated as malfunctions, and such judgments will inevitably be informed by experience utility. Why, after all, do we feel more inclined to honor a gay man’s daytime desire and intention to use a condom over his nighttime tendency to throw caution to the wind? Because we believe that he will be better off over the long-term, having made some kind of intuitive welfare calculation that the benefits do not justify the risks.

6.1.2. Informed decision utility

An alternative approach would be to de-bias and inform decision makers so as to strip out biases and mistakes to the maximum extent possible. To succeed, this approach needs to go beyond typical measures that have been taken to help people make informed decisions. For example, in the United States, the FDA requires food manufacturers to provide detailed, informative, labels on the foods they sell. On the one hand, this FDA regulation may appear paternalistic, with the heavy hand of government creating undue expense for the food industry and controlling the kind of information consumers receive about food products. Nevertheless, this regulation can also be seen as enhancing the free market, by giving people more ability to make informed decisions.

Whether viewed as paternalistic or libertarian, this FDA regulation is clearly based on the theory that people make better food choices when those choices are informed. And to the extent that this is true, this policy may improve

people's well-being.⁷ But such policies should go further in terms of incorporating insights from behavioral economics. Do people make wiser decisions when they are told that 70 out of 110 calories in a serving come from fat or when they are told the percent of calories coming from fat? Are people appropriately conscious of what a serving size is? We expect that food labeling would be improved if regulators took greater account of how people interpret and use such information when making food purchases.

Within the healthcare community, there have also been policies and practices put into place that have been designed to improve individual decision making. Among these is the development of prepackaged decision aids designed to help patients understand their treatment choices. The theory underlying the development of decision aids has been that if patients receive comprehensible information about their healthcare alternatives, they will be more capable of choosing treatments that best fit their preferences. Choice of treatment for prostate cancer, for example, may hinge on a man's relative attitudes towards long-term survival with impotence versus living a shorter time but with normal sexual function (Singer et al., 1991). As with the FDA food labels described earlier, the theory behind patient decision aids hinges on the idea that people make good use of such information, and therefore when given such information will make decisions that maximize their self interest.

Informing and de-biasing decision makers makes perfect sense in principle, but is much more difficult in practice. For example, no one has yet devised a method of making someone who does not have a colostomy appreciate what it would be like to have one, and especially to imagine having adapted to that colostomy after an extended period of time. Indeed, patients' reactions to decision aids have been shown to be prone to many of the cognitive biases that have been documented in other decision domains (Ubel, 2002). For example, people who learn first about the risks of a treatment followed by its benefits make different choices than people who first learn about its benefits and then its risks. Decision aid developers have no choice but to present information in one order or another, but unfortunately the order they choose will almost inevitably affect people's decisions. Similarly, because people tend to be much more engaged by testimonials than by statistics, many decision aid developers have included testimonials from other patients to help them understand the decision at hand, but studies have shown that providing such testimonials can have the perverse effect of causing people to ignore more diagnostic statistical information (Ubel, Jepson, and Baron, 2001).

Indeed, even de-biasing the overweighting of small probabilities has proven extraordinarily difficult. For example, Ubel and colleagues presented people with a hypothetical choice of two surgical treatments for colon cancer (Amsterlaw et al., 2006). The first surgery provides an 80% chance of cure of the cancer without complication, and a 20% chance of death from the cancer. The second surgery also cures people without complications 80% of the time, but leads to only a 16% death rate. The remaining 4% of patients receiving this surgery do not die of their cancer but instead survive with some kind of temporary or permanent surgical complication — a chronic colostomy, a wound infection that takes a year to heal, chronic diarrhea, or intermittent abdominal pain. The tradeoff between these two surgeries should logically depend on people's preferences for death versus these four surgical complications. However, even though more than 90% of people prefer each of the four surgical complications to death, the majority of people choose the first surgery, the surgery without complications but with a higher death rate, because they overweight the small (1%) chance of experiencing each of the four complications.⁸ Ubel and colleagues have conducted a series of studies to try to de-bias this choice, but have found that people are resistant to such efforts.

Given the difficulty of de-biasing people, even when it comes to this seemingly simple decision, the prospects for such interventions remain uncertain, at best.⁹ Moreover, reliance on informed decision utility is, again, unlikely to fully avoid being influenced by considerations of experience utility. Attempts to de-bias people and to inform their decisions inevitably involve value judgments. Who is to say, for example, that when people choose a 20% chance of death over a

⁷ Providing information, even if totally accurate, can, however, sometimes have unintended hedonic consequences. Thus, for example, by reminding people of the poisons they are ingesting, food labels can decrease pleasure from eating even when they fail to change behavior (Loewenstein and O'Donoghue, 2006).

⁸ The remaining 10% of the people stated that they would prefer to be dead than to live with a colostomy or a wound infection that took a year to heal. Based on these preferences, the surgery that yields none of these complications would seem to be the best choice. But do we trust these people when they say that they are confident that life with a colostomy would be a life not worth living? Research shows that most people with colostomies have moment to moment well-being that approaches that of the healthy public. As just noted, we know of a de-biasing method that is likely to change these people's minds.

⁹ However, there is room for improving decision aids. Thus, Ubel's research team has found ways of using graphical representations of risk that get rid of order effects (Zikmund-Fisher et al., 2005), denominator effects, and the undue influence of patient testimonials (Fagerlin et al., 2005).

16% chance in addition to a 4% chance of complications that they are not making a choice that is right for them? If we were not so convinced that it is not the best choice, we would not have gone to so much trouble to de-bias them.

Despite its flaws, we believe that experience utility can play an important role in informing policies that influence individual behavior as long as individuals retain ultimate authority over their own decisions. Thus, for example, a well designed decision aid should thoroughly and convincingly inform people about the way various health outcomes would influence their moment to moment moods, so that patients' decisions will not be influenced by errors in affective forecasting. But a decision aid should not compel people to base their choices on experience utility. People should be free to make decisions based on whatever criteria they choose.

6.2. *Criteria for guiding policies that operate on a level higher than the individual*

When it comes to taxation, spending, and regulation, governments make decisions that powerfully affect the lives of citizens — effects that are not ultimately mediated by individual choices and in fact, in many instances, constrain individual choices. For example, urban planners often decide how tall to allow buildings to be in a downtown area, how much park land to make available to the public, how many lanes to put in the commuter highway into town, and myriad other decisions. People making urban plans clearly respond in part to public pressure. People may express strong desires to have large lots for their houses. They may vote with their feet and move out to the exurbs, and thereby increase pressure for urban planners to increase the number of lanes on the highway to reduce commuter congestion. And political considerations come into play as people with economic interests, such as real estate developers and highway contractors, attempt to influence the political process.

But urban planners do not need to respond passively to consumer demand, but would do well to take account of people's well-being, whether it be their moment to moment moods as captured in current measures of experience utility, or some of the other measures of well-being we have described above that are currently not captured in experience utility measures. There is evidence, for example, that long commutes reduce people's well-being (Kahneman and Krueger, 2006). This is relevant information for urban planners who are, for example, trying to decide whether to encourage people to live closer to the city or further away. Urban design can increase or decrease people's likelihood of socializing with their neighbors, or of walking in their neighborhood as a form of exercise or as a way to get to the local market. Because social interaction and exercise are valuable social activities, independent of how they affect people's moment to moment mood, urban planners may want to take these into account.

Given the problems associated with both experience utility and decision utility, how should policy makers make these types of decisions? We believe that the best approach may involve decision utility measures among people who are thoroughly and convincingly informed about the relevant research on experience utility. This approach could be achieved through “deliberative democracy” methods, which have been tried with some success (Dorfman et al., 2006; Bohman, 1998). Deliberative democracy involves assembling a random sample of a relevant population together to be informed by experts about a particular domain, to deliberate in a leisurely fashion, and to generate policy proposals.

To bring elements of experience utility into deliberative democracy, one dimension of the process would involve informing participants of the relevant research on experience utility — i.e., providing them with accurate information about what people's experiences are really like under different circumstances. This information should, ideally, be collected using ecological momentary assessment methods. But the deliberation will undoubtedly move beyond measures of such experience, to consider other things people care about that are not captured by such experiences. Deliberators will think about the importance of maintaining social functioning, and expanding people's opportunity range, independent of how people will experience their circumstances.

Deliberative methods do not necessarily need to follow formal techniques of deliberative democracy. All honestly motivated policy makers try to deliberate about the competing goals their policies affect. Such deliberations need to be open to the idea that some things, like freedom and knowledge, are inherently valuable independent of the extent to which they affect experience utility. One way to guide public policy, then, is to develop methods for informing policy makers about the experience utility their constituents are likely to experience should they face specific outcomes, and finding ways for them to make decisions that reflect such information.

Informing decision utility in such a fashion is not going to be simple. It is not clear that policy makers will readily accept the information that we give them about the emotional consequences of chronic illness, or of life in small versus large homes, given how counterintuitive people's emotional reactions to such circumstances can be. But policy making has never been a simple thing to do. Even in traditional economic models, for example, policy planners need to take

care of externalities that are not accounted for by the decisions people make and the preferences these decisions reveal. Policy planners should not only pay attention to traditional economic measures in making their decisions, but supplement these measures with current measures of experience utility. In addition, they need to consider expanded measures of experience utility that capture things like meaning and self-identity that are not currently captured by experience utility measures.

In summary, whether it comes to government policies that influence individual decisions or policies that directly affect people's situations, the ideal welfare criterion will involve a hybrid consideration of both decision and experience utility. Ultimately, people need to be given as much decision making autonomy as is possible. But the decisions they make should be informed, as much as is possible, by a deep understanding of their consequences for experience utility.

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