Subjective Well-Being and Public Policy

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Abstract:

Measures of subjective well-being have gained substantial attention in economics as quantitative approximations of individual welfare. They allow researchers to study relevant determinants of welfare on an individual as well as on a societal level. These determinants might not to be easily detectable in observable behavior. By referring to the recent well-being literature, we provide a selection of determinants of well-being that are important for public policy and show how the analysis of subjective well-being is applied as a complementary analytical tool for policy evaluation. We highlight the use of these measures for guiding public policy in areas that might involve suboptimal behavior. We also discuss some challenges for future research that are associated with the choice of evaluation metrics, the role of aspiration and adaption in evaluations, and utility misprediction.

Keywords: Subjective Well-Being, Determinants of Welfare, Policy Evaluation, Bounded Rationality

It is self-evident that public policy *should* be oriented towards the well-being of the people. It is similarly evident that views differ regarding what well-being means and what contributes to well-being. Moreover, we see that public policy *is* used (but also abused) to affect the allocation and redistribution of resources and thus well-being. In order to gain a better understanding of such normative and positive issues regarding the relationship between public policy and subjective well-being, several questions need to be addressed. First, there is the question of what well-being is. In an empirical context, survey research has derived several measures of subjective well-being that capture facets of what people consider a good life. Second, there is the question about the determinants of well-being. Third, we would like to know how these measures of subjective well-being can be analyzed to learn about the welfare consequences of alternative policy arrangements. From a constitutional perspective, we would like to understand what basic rules can be implemented to secure well-being-enhancing public policies and, thereby, create environments that make people better off.[1]

In this chapter, we provide an overview of some recent reactions to these questions and illustrate how insights from research on subjective well-being can provide guidance for a well-being evidence-based public policy.[2] Studying covariates of subjective well-being helps us to understand the critical determinants of individual welfare, which involve both tangible and non-tangible (psychological) aspects. Based on measures of subjective well-being, it is possible to uncover welfare consequences that are partly unobservable when using traditional measures of economic and social progress such as national income. However, even with a better understanding of the determinants of well-being, an institutional perspective on public policy reminds us that it is not possible to simply trade-off the different contributors to well-being. Instead, we advocate that subjective well-being measures should be applied in comparative analyses in order to learn about the consequences of alternative institutional and policy arrangements.

In particular, we see two major benefits of well-being research for policy evaluation. First, it facilitates evaluations which analyze numerous, potentially countervailing effects of policies, thus allowing the researcher to study their net effects on individual welfare. Well-being research thus helps to identify institutions that enable individuals to better meet their preferences. Furthermore, it offers a promising alternative method (often called *Life Satisfaction Approach*) for directly evaluating the benefits provided by public goods. Second, subjective well-being research provides an alternative approach for policy evaluation in areas that might involve suboptimal behavior. With regard to the insight commonly applied in behavioral economics (and also a popular adage) that people do not always behave in their own best interest, we emphasize the need to weaken the assumption of consumer sovereignty in rational choice analyses and the strong (or exclusive) reliance on observed behavior as a welfare criterion. If some behavioral choices are suboptimal from an individual's perspective, research can then seek to identify the conditions under which such choices are less likely. Data on subjective well-being can provide a valuable input for the discourse and people's limitations in pursuing their ideas of the good life. This empirical research on subjective well-being provides a tool for policy evaluation in areas where decision utility (as reflected in behavior) systematically diverges from experienced utility.

There are, of course, many open issues and challenges to the use of subjective well-being for public policy. First, the well-being approach involves the choice of a concrete evaluation metric: the metric that is used to elicit people's judgments. Depending on the applied measure, different (policy) conclusions might be inferred. Second, hedonic adaptation and the aspiration treadmill have potentially great consequences for the assessment of the nexus between public policy and individual well-being. And third, studies in the field of economics and psychology suggest that people systematically mispredict the utility they derive from some circumstances in the future. This might lead to suboptimal decisions. However, up to now it is rather difficult to derive policy implications from the results in the literature.

The remainder of this chapter is organized as follows. In section 2, we start with the measurement of individual well-being for public policy and provide some examples of policy-relevant covariates of subjective well-being. Section 3 discusses different aspects and examples of policy evaluations based on subjective well-being data, including the life satisfaction approach to value public goods. A separate section 4 addresses the potential of individual ex post welfare judgements for policy evaluations in areas that might involve suboptimal behavior. In section 5, we take up three challenges for well-being evidence-based public policy. Section 6 offers concluding remarks based on a constitutional perspective.

Policy-Relevant Determinants of Subjective Well-Being

Subjective Well-Being as a Complementary Welfare Measure

Over the past two decades, economists have rediscovered their interest in the concept of utility as a measurable quantity, as it had been abandoned with the ordinal revolution in economics on the basis of general skepticism regarding subjective measures. The same holds for most other social sciences, but not for psychology where already in 1999 Diener, Suh, Lucas, and Smith reviewed "three decades of progress" after a first review of the topic by Wilson in 1967. In this recent counter-movement of "happiness research" (as termed colloquially), data on subjective well-being is used as an empirical approximation of utility and individual welfare.[3] This approach bases judgements of individual welfare on people's self-evaluations of the quality of their lives rather than on a decision utility that is inferred from observed choices (Kahneman, Wakker, & Sarin, 1997). In contrast to the traditional choice-based approach, the experience or survey-based approach explicitly adopts and makes reference to (unobservable) psychological content, such as a person's beliefs, desires, or emotional states (e.g., Hands, 2009). It can therefore be argued that the experience or survey-based concept of utility captured by measures of subjective well-being is broader and more accurate and appropriate in identifying what people care about.

Subjective well-being can also serve as a welfare indicator from an aggregated perspective. It has various advantages over traditional measures of economic activity which reflect only the monetary value of goods and services trades in formal markets. Subjective well-being goes beyond measuring market transactions by incorporating non-material aspects, such as the welfare derived from social relationships, the experience of autonomy and competence, the absence of insecurity, or grievance derived from perceived inequality. Moreover, measures of happiness consider *outcome* aspects of components already included in the gross national product (GNP) via input measures. This holds, in particular, for the vast area of government activity (measured in GNP by the cost of material and labor). The statistics based on these subjective well-being measures are generally used to complement the traditional measures of aggregated welfare, such as GNP per capita.[4]

In sum, subjective well-being may serve as an alternative welfare indicator which allows the researcher to directly study relevant determinants of welfare both on an individual and on a societal level. The identification of the determinants of individual well-being can then provide some guidance when considering basic rules and defining the relevant space for public policy. By referring to the recent well-being literature, we highlight in the following examples for determinants of subjective well-being that matter for public policy.

Examples of Policy-Relevant Covariates of Subjective Well-Being

Unemployment and inflation. The view that considered unemployment to be a social bad changed with the advent of the new classical macroeconomics perspective in which all unemployment is considered to be voluntary. According to this view, the important reasons why people decide not to work are that unemployment benefits are too attractive relative to the salaries achieved on the market, or simply that the going market rate is below the reservation wage. However, the results of subjective well-being research show that the scope of this position is too narrow.

First, unemployment reduces the individual well-being of those personally affected, even if the lower income available to them is statistically taken into account. For example, Kassenboehmer and Haisken-DeNew (2009) find that entering unemployment has a negative causal effect on life satisfaction. They identify this effect by studying a sample of people in Germany who experience an exogenous transition into unemployment due to plant closure. Based on their findings, they conclude that the non-pecuniary costs of unemployment are dramatic, particularly for women during their first year in unemployment.

Second, unemployment reduces the subjective well-being not only of the individuals who are actually unemployed, but also of those who currently work. Luechinger, Meier, and Stutzer (2010), for example, find that an increase in regional unemployment substantially reduces the reported life satisfaction of the people who currently work. However, with regard to people who work in the public sector and who usually enjoy extended protection from dismissal, the negative effect is about a third lower than for private sector employees. The results suggest that general unemployment is accompanied by increased economic insecurity and that this is an important component of the psychological costs of general unemployment.

Besides unemployment, inflation is another economic variable that affects individual welfare and has strong policy implications. A one percentage point increase in inflation is often considered to result in the same welfare loss as a one percentage point increase in the rate of unemployment (this view is reflected, for example, in the so-called misery index). However, research has shown that the negative well-being effects of inflation seem to be relatively less severe than those from unemployment (Di Tella & MacCulloch, 2006). The size of this relation varies between studies, though. Using data for 12 European countries over the period from 1975 to 1991, Di Tella, MacCulloch, and Oswald (2001) report that people would trade off a 1 percentage point increase in the rate of unemployment for a 1.7- percentage point increase in the rate of inflation. With data for a longer time period from 1975 to 2013 and for a larger set of EU member countries, Blanchflower, Bell, Montagnoli, and Moro (2014) find the same direction of relationship. However, their estimates imply that unemployment has a much stronger negative impact. They report that a one percentage point increase in the rate of unemployment lowers well-being more than five times as much as a one percentage point increase in the rate of inflation.

Income and income inequality. People obviously care about their income, but they also care about others' incomes, as well as income inequality within a society. Based on a repeated cross-section of Americans over a 37-year period, Oishi, Kesebir, and Diener (2011) find a direct negative effect of income inequality on happiness. Americans were, on average, happier in years when relative national income was comparatively more equally distributed than in years when it was less equally distributed. They further find that this relationship cannot be explained by lower household income, but that it is moderated by psychological factors, i.e., a decrease of perceived fairness and trust.

Schwarze and Härpfer (2007) present evidence for Germany that people of all income classes report lower life satisfaction when regional income inequality increases. This may be due to inequality aversion and/or empathy for the poor. Similarly, if economic shocks increase unemployment, people may care about the fate of the people who experience unemployment, reducing their own sense of well-being (over and above the effect of the increase in economic insecurity discussed above).

Another explanation for the negative impact of income inequality is the importance of relative position or status as a determinant of people's well-being. The empirical well-being literature documents that an individual's well-being level is reduced when the average income of other individuals increases.[5] For example, Stutzer (2004) studies residential communities and finds that the average income level in the community of residence is significantly positively related to people's income aspirations and negatively correlated with people's life satisfaction. Luttmer (2005) reports a negative correlation between self-reported happiness (and other indicators of well-being) and income in the neighborhood. Dynan and Ravina (2007) confirm the general finding that beside the positive effect of an absolute income increase, there is a positive relationship between people's income positions relative to that of their neighbors and self-reported happiness. In their study for the United States, they further show that this relationship is stronger for individuals who have above-average incomes. This finding highlights the fact that an income-based analysis of the evolution of aggregate welfare in a society might be insufficient.

Further aspects. Beside these prominent economic determinants of subjective well-being, recent literature has identified a broad range of other relevant aspects that are directly or indirectly linked to public policy. This includes aspects such as social capital and quality of social relationships, religious faith, exposure to crime, and access to technology, as well as, of course, health and health care. Picking out an example, van den Berg, Fiebig, and Hall (2014) provide evidence for a relationship between caregiving and self-reported life satisfaction. Based on Australian panel data, they find that weekly informal care time is associated with reduced life satisfaction for the care-giving person. As the authors argue, this finding is important given that the development of sustainable long-term care systems is one of the main challenges for public policy in high-income countries.

Subjective Well-Being for Policy Evaluation

Inherent Risk of Premature Policy Proposals

If research provides information about outcomes linked to individual well-being, it is tempting to suggest policy interventions that strengthen positive outcomes and diminish negative ones, by trading them off to obtain an optimal policy mix that maximizes some empirical indicator of subjective well-being. Unemployment may be a case in point. One might propose that to improve the lot of the unemployed, transfers should be increased, and to reduce the economic insecurity of the employed during a crisis, employment protection should be extended. However, such conclusions might be premature. Regarding the first aspect, the personal psychological costs of unemployment due to a strong social work norm might be functionally or even necessary in order to maintain a generous and financially sustainable social benefit system. These costs help to limit moral hazard; namely, that citizens search less intently for re-employment when receiving higher unemployment benefits. With regard to the aggregate level, increased job protection might benefit those who already have a job (see, for example, Clark & Postel-Vinay, 2009). However, it is also likely to make employers more reluctant to hire new workers, which is detrimental for the job prospects for those who are unemployed. Thus stronger labor protection rights might lead to longer individual unemployment spells and to higher general unemployment.

These classic arguments highlight the importance of equilibrium effects and potential (unintended) side effects when thinking about policy interventions. In our opinion, these considerations highlight the limitations of an approach that focuses on an optimal outcome mix. Instead, we recommend an approach that uses a constitutional perspective which derives policy proposals by referring to basic institutions and rules (see also Frey & Stutzer, 2012). This shift in perspective has implications for empirical research on subjective well-being, because the focus is then on the evaluation of institutions. Regarding the important social issue of unemployment, analyses then attempt to evaluate the consequences of labor market institutions and the system of social insurance on the subjective well-being of all the people, irrespective of whether they have the status of employed, unemployed or not in the labor force.

In the following, we try to elucidate these considerations and present examples of how well-being research can be applied to evaluate policy rules and to assess outcomes for policy decisions.

Examples of Policy Evaluation Based on Subjective Well-Being

Labor market regulations. So far, little is known about the institutions that reduce the vulnerability to shocks on the labor market measured by individual well-being. In a longitudinal sample of the European Union, more generous unemployment benefits are found to correlate positively with subjective well-being in the general population (Di Tella, MacCulloch, & Oswald, 2003). Based on the same data from the Eurobarometer, the negative effects of individual and general unemployment on reported life satisfaction are found to be larger in countries with lower job protection (Becchetti, Castriota, & Giuntella, 2010).

In a recent analysis for the United States, Aghion, Akcigit, Deaton, and Roulet (2016) analyze the link between structural change and people's subjective well-being measured based on Cantril's ladder of life. They focus on the moderating effect of a more or less generous unemployment insurance in terms of the maximum weekly benefit amount. Structural change is captured at the level of the metropolitan statistical area in terms of the rate of job creation as well as job destruction. They find that a higher job turnover rate (i.e., the sum of the job creation and the job destruction rate) has a more positive effect on reported well-being in states which have more generous unemployment insurances. This result is due to a much smaller negative effect of job destruction on well-being: They write: "[A] one standard deviation increase in our measure of UI generosity reduces the negative effect of the job destruction rate by 33 percent" (p. 3891).

Based on panel data for Germany from 1992 to 2004, Crost (2016) studies whether workfare programs, as a key part of the active labor market policy in Germany, reduce the negative effect of unemployment on subjective well-being. The analysis indicates that workfare employment offsets part of the negative effect of unemployment on individual life satisfaction, at least in the short run. Based on a day reconstruction survey among 1,080 participants in workfare schemes in Germany, Knabe, Schöb, and

Weimann (2017) draw the same conclusion. They find that the life satisfaction of people in workfare employment is between that of employed and unemployed people and that their emotional well-being is even the highest of these three groups. They argue that identity utility might account for part of the effect. In environments with strong social work norms, unemployed people suffer more from their lot (Stutzer & Lalive, 2004). So even workfare employment is able to restore some of the loss in identity from work. Of course, many further applications are possible with regard to different labor market regulations (see, e.g., Alesina, Glaeser, & Sacerdote, 2005, on the regulation of working hours, Dräger, 2015, on employment protection, and Charles, 2004, on the effect of mandatory retirement).

Taxation. Research on subjective well-being has produced different insights which have the potential to inspire our views about taxation (see Weisbach, 2008, for an overview). However, the direct effect of taxation on well-being is difficult to identify, and there are only a small number of studies which consider the well-being consequences of particular tax schemes. One example is the study by Oishi, Schimmack, and Diener (2012) that finds a positive statistical association between a more progressive taxation regime and subjective well-being in a cross-section of 54 countries, controlling for national income and income inequality. An additional analysis suggests that this effect is mediated by citizens' satisfaction with public goods such as education and public transportation. Alpaslan et al. (2012) exploit exogenous variation in tax rules over time and across demographic groups in Germany and find a positive tax effect on subjective well-being. Importantly, this effect is measured conditional on net income. While they cannot identify the relevant mechanism, they consider a better provision of public goods or more redistribution and insurance through the social security system as potential channels through which higher taxes may promote citizens' satisfaction levels.

Some insights from well-being research have been related to proposals for optimal taxation (see Frank, 2003, Layard, 2006, or Mujcic & Frijters, 2015). These studies refer to the importance of status or relative position as determinants of people's well-being. Individuals do not value simply the absolute level of their income, but compare themselves with people who have higher incomes (see also section 2.2). From this insight, it is inferred that the rise in one person's income or status creates a *positional externality* if it affects the utility of other people. For example, someone owning a fancy sports car imposes a negative external effect on all other people who do not own such a good, but are motivated to strive for it.[6] If people pursue status competition by working and spending more money in order to gain an equal or a higher social position relative to their peers, this strategy leads to a zero-sum or even a negative-sum game. The tax proposal should aim to mitigate this effect by heavily taxing high-income earners (or specifically the consumption of status/luxury goods).

However, the greater the induced distorting effects of taxation are (for example, tax evasion promoted by tolerance towards shadow economies), the less successful taxation interventions are likely to be from a welfare perspective (see also Weisbach, 2008). Even if the taxation of income and consumption were successful in undoing the negative status externalities from income comparisons, status competition might persist via other channels, because people have a natural urge to distinguish themselves from others.[7] The crucial question is whether the positional externalities in these other dimensions are weaker or stronger (see, e.g., Clark, 2016, on social comparisons in different life domains).

While we are beginning to understand positional externalities as a phenomenon, we think that it is premature to draw policy conclusions in terms of optimal income or consumption taxes. Instead, we should engage in the complementary comparative institutional analyses of different governance structures (capturing the revenue-generating side as well as the expenditure side) in terms of their effects on the subjective well-being of different groups in society.

Public or non-tangible goods. In the current politico-economic process, government agencies undertake some of their decisions based on cost benefit analyses (CBAs). CBAs are a corner stone of the welfare economic approach to public policy. However, the benefits from public goods are difficult to measure in monetary terms, as the marginal utility to consumers is not reflected in market exchanges. Inspired by well-being research, a promising method used to quantify the costs and benefits of public goods has been proposed, often called the "*Life Satisfaction Approach*" (see Frey, Luechinger, & Stutzer, 2010). Taking reported subjective well-being as a proxy measure for individual welfare, it is possible to directly evaluate the utility provided by public goods. The marginal utility of public goods (or the disutility of public bads) is captured by correlating the amount of public goods (or public bads) by means of individuals' reported subjective well-being, controlling for many other determinants on happiness. By comparing the marginal utilities of public goods to the marginal utility of income, the trade-off between income and public goods can be calculated.

The Life Satisfaction Approach avoids some major difficulties of both the stated preference and the revealed preference approaches.[8] With the Life Satisfaction Approach, it suffices if respondents indicate their own life satisfaction. As the collection of survey data on subjective well-being is not linked to a specific policy goal, there is little reason to expect strategic answers.[9]

The Life Satisfaction Approach has, among other applications, been used to value airport noise nuisance (van Praag & Baarsma, 2005), air pollution (Welsch, 2006; Luechinger, 2009; Levinson, 2012), crime (Manning, Fleming, & Ambrey, 2016), flood hazards (Luechinger & Raschky, 2009), terrorism (Frey, Luechinger, & Stutzer, 2009), or wind turbines (Krekel & Zerrahn, 2017).

Recent studies have reached a high standard of quality, and the preconditions for its application are continually being refined and formulated. What so far was an academically driven development of a new method may soon become an empirical tool that meets the demands of the political process.

Policy Evaluation in Areas That Might Involve Suboptimal Behavior

Considering Limited Willpower

From a behavioral economic perspective, policy evaluations need to consider the insight that people are not always able to behave in a manner that serves their own best interests.[10] This questions the standard economic view that people are fully able to behave in a time-consistent manner and to commit to their long-term consumption plans. In contrast to this view, the behavioral economics perspective allows for the possibility that people might consume certain goods in excess of their (long-term) preferences due to limited self-control (see, e.g., O’Donoghue & Rabin, 1999; or Ameriks, Caplin, Leahy, & Tyler, 2007). In cases where suboptimal behavior occurs, the application of a choice-based concept of welfare is insufficient for public policy evaluation, because it assumes that whatever people choose makes them, in their expectation, best off (see, e.g., Bernheim & Rangel, 2007; or Loewenstein & Ubel, 2008). However, the standard economic perspective that focuses on people's behavior as the benchmark for welfare analysis can be complemented with data on subjective well-being. The latter offers an indicator for public policy evaluations, particularly in areas that might involve suboptimal consumption choices resulting from, for example, limited willpower.

With regard to the respective policy consequences, suboptimal consumption patterns due to limited willpower are no cause for immediate government intervention. For instance, people who suffer from limited self-control might search for commitment devices that help them to pursue their optimal consumption path. Policies might then aim to offer individuals who are subject to self-control problems ways of overcoming their weaknesses by proposing self-binding mechanisms (for a broader discussion see, e.g., O'Donoghue & Rabin, 2006a).

A widely discussed policy intervention is the imposition of excise taxes on the consumption of goods that people tend to overconsume. If such taxes support self-control, they might make consumers with limited willpower better off. The regulation of risky health behavior such as smoking offers an excellent example. Analogous to negative externalities, consumers with self-control problems suffer from a negative internality, which could contribute substantially to the welfare costs of addiction (see, e.g., Jürges, 2004).[11] In reference to excise taxes on tobacco products, O’Donoghue and Rabin (2003, 2006b) investigate negative internalities and argue that “sin taxes” can be imposed in cases where people exhibit an over-consumption of unhealthy goods. However, the degree to which such internalities (over and above externalities) serve as a rationale for additional policy interventions is the topic of a lively controversy (see, e.g., Sugden, 2008; Frey & Gallus, 2016; or Schnellenbach & Schubert, 2015).

Evaluation of Tobacco Control Policies as an Example

Tobacco control policies such as cigarette taxes or smoking bans are controversially discussed, as they have a multitude of consequences that affect people’s health and welfare in various ways, sometimes with a counteractive effect. In general, tobacco control policies aim at internalizing the social costs of smoking by protecting people from second-hand smoke, as well as at lowering costs for publicly funded health care by making smoking less attractive. A successful tobacco control policy should therefore lead to positive net-welfare effects, overall. Smokers, are nevertheless predicted to be worse off, as the policies restrict their behavior. However, if tobacco consumption involves time-inconsistent behavior, tobacco control policies might also have a positive impact on the individual well-being of smokers, because they can serve as a self-control device. Therefore, different predictions for the welfare consequences of anti-smoking policies emerge, depending on the assumed time consistency in smokers' consumption behavior. However, all the tobacco control policies are expected to make smoking less attractive and to reduce the prevalence of smoking among people who have full self-control and those who have limited self-control. This makes it difficult to assess the various welfare consequences of such policies when the evaluation is based on observed consumption behavior.

To address these challenges, Odermatt and Stutzer (2015a) analyze the welfare consequences of smoking bans and cigarette prices based on data on reported satisfaction with life. They use data from 40 countries and regions between 1990 and 2011 and exploit the staggered introduction of smoking bans and the respective progressively increasing cigarette prices across Europe. They simultaneously analyze the net-welfare effects of smoking bans and cigarette prices and differentiate between the effects not only for likely smokers and non-smokers, but also for smokers who failed to stop smoking. The latter group potentially captures people with limited self-control. Their estimates do not reveal any statistically significant systematic changes in people's life satisfaction levels as a result of implemented smoking bans, on average. For cigarette prices, they show a negative partial correlation with life satisfaction. This latter correlation is driven by a quantitatively relevant negative effect of higher prices on smokers. Furthermore, the results indicate that for likely smokers who failed an attempt to quit smoking, smoking bans are beneficial in terms of life satisfaction, while higher cigarette prices are not.[12] The results show that the capacity of cigarette taxes to serve as a self-control device might be limited, while the implementation of smoking bans, in contrast, might help smokers to overcome their self-control problems. This is consistent with models that emphasize temptation as being a driver of time-inconsistent behavior. According to these models, cues trigger a temptation to smoke, leading smokers to overconsume the addictive good if they are unable to resist it by exerting their willpower. The insights that some smokers show time-inconsistent behavior and thus benefit from commitment devices that help them to align their actual consumption with their desired long-term consumption-path are of relevance from a welfare perspective and can provide an input for public policy with potential implications for any good that is subject to the risk of overconsumption.

Challenges for Well-Being Evidence-Based Public Policy

Measurement

Many measures of subjective well-being have been analyzed in studies related to public policy. There is no consensus on which measure is best (see Diener, 2006; Helliwell, 2006; Kahneman & Riis, 2005; Dolan & Metcalfe, 2012). This is probably for good reason, as the researcher’s choice of the concept to be used should depend on the specific study’s objective and research question. We briefly discuss three aspects that might be considered.

First, the well-being approach obviously involves the choice of a concrete evaluation metric that is used to elicit people’s judgments. For a measure of reported subjective well-being to serve as a good proxy for individual welfare, one property seems particularly relevant. The evaluation metric should fit people's self-evaluations of their quality of life. Second, in order for changes over time in reported subjective well-being to have an informative value, individuals must be assumed to have stable evaluation standards. If this assumption is violated, any observed changes in reported well-being scores might not be driven by true changes in well-being, but instead potentially result from scale changes.[13] One psychological mechanism is that individuals do not rate their own situation in reference to an absolute standard, but in reference to a relative standard, and that this relative standard might change over time (e.g., Kievit et al., 2010). However, it is still a partly unresolved issue whether the change in the relative standard is associated with a real change in the hedonic experience, i.e., true hedonic adaptation, or only with a change in the description of the same hedonic experience, i.e., scale norming. Third, when using self-reported measures of well-being it is assumed that people's reporting of their well-being does not systematically deviate from their actual assessment. An obvious violation would be if people would have an incentive to systematically lie or to actively manipulate their answers. A more subtle potential violation which is discussed in the literature is distorted response behavior, which is due to context effects such as social desirability, i.e., the tendency of subjects to attribute characteristics to themselves which are socially desirable (Edwards, 1957).[14] It is thus important that researchers are aware of potential design and context effects in their satisfaction data.

Adaptation and Aspirations

A central finding in happiness research is that many changes in life circumstances have only short-lived effects on reported subjective well-being. While it seems self-evident that people’s well-being changes in most instances when circumstances change, it is less clear to what extent such changes persist when the new conditions stabilize.[15] Overall, evidence suggests that there is adaptation to changes in circumstances, for example due to major life events. This adaptation, however, differs across events and is far from complete for some of them (for a discussion of the claim that changes in well-being are only temporary, see Powdthavee & Stutzer, 2014, and the other chapters in Sheldon & Lucas, 2014).

The second, closely related phenomenon is the change in people's aspirations due to changes in their life circumstances. One exemplary finding is that people adjust to income increases by increasing their material aspirations in that their new levels of income are considered "necessary" for them to make ends meet (Stutzer, 2004; Di Tella, Haisken-De New, & MacCulloch, 2010). This process has become known as the aspiration treadmill. Hedonic adaptation and the aspiration treadmill have important consequences for the assessment of individual welfare depending on the degree to which they are considered.

One example of their relevance is the case where courts have to decide about compensation for losses suffered in car accidents. For the same physical harm, should they award lower damages to people with a strong capacity to adapt and higher damages to others? Or related to government taxation, should materialists with high income aspirations who suffer a great deal from personal income taxes face lower tax rates than people who can easily adapt to whatever material living standard they are confronted with? Moreover, if people's aspirations or capacities to adapt were taken into account in policy-making, one would have to deal with the incentives that these individualized criteria create; for example, when a person claims to adapt slowly in order to obtain a higher compensation or claims to have high aspirations in order to be taxed less heavily. People would be induced to "play the system" instead of revealing their true state of subjective well-being. As a consequence, it is difficult, if not impossible, to determine an individually optimized compensation that is considered fair by the persons involved.

An acceptable rule can possibly be found at the constitutional level behind the veil of uncertainty in which nobody knows whether he or she will be the victim of an accident or whether he or she is a quick or slow adaptor. This holds more generally – how adaptation and aspiration effects have to be dealt with in public policy cannot be answered based on some well-being calculus, but requires to be dealt with in a process of collective decision-making.

Utility Misprediction

The conception of individuals who engage optimally in forward-looking utility maximizing behavior is part of the basis of the rational choice approach to human behavior, which is prevalent in economics as well as other social sciences. Studies at the intersection of economics and psychology, however, suggest that people for some circumstances systematically diverge from this view and do not accurately predict the utility they derive from alternative conditions (see e.g., Loewenstein, O'Donoghue, & Rabin, 2003; Kahneman & Thaler, 2006; and Frey & Stutzer, 2014). Odermatt and Stutzer (2015b) show that this also applies after major changes in life circumstances due to widowhood, unemployment, marriage, or disability. People tend to underestimate the degree to which the impact of the event on their life satisfaction declines over time.

The finding that people, on average, do not accurately predict their subjective well-being has profound implications for the modeling of human behavior. While it is in itself questionable whether observed adaptation can be explained from a standard rational choice perspective in which stable preferences are assumed, the finding of a systematic underestimation of adaptation is not compatible with the paradigm of rational expectations, a cornerstone of expected utility theory. From a welfare perspective, mispredicted subjective well-being is relevant for choice formation, where the choice relies on predicted subjective well-being. Mispredicted subjective well-being could result in the misallocation of a person's resources, resulting in a lower level of individual welfare than would be achieved with unbiased decisions.[16]

However, from the results in the literature so far, it is difficult to derive direct policy implications. A better understanding is required on an individual level in order to provide a basis for advancing our understanding of the welfare consequences of misprediction on a societal level. This could, for example, comprise an investigation of the extent to which people's misprediction is carried forward through the political process with potentially biased outcomes on an aggregated level, such as a suboptimal amount of public good provision (see Frey & Stutzer, 2006, for a discussion). Nevertheless, studies based on subjective well-being can provide a source of information for people to improve their choices, both as private individuals and participants in processes of collective decision-making.[17] For example, people equipped with such insights derived from research might decide to overcome behaviors which reduce their well-being by resorting to collective arrangements. They might, for instance, turn to self-binding mechanisms such as government-mandated maximum working hours and weeks of vacation. In this way, well-being research can also contribute to (constitutional) public policy that is aimed at people who are only boundedly rational.

Concluding Remarks

The analysis of people's subjective well-being offers great opportunities for public policy. In this chapter, we have emphasized the evaluation of particular policies as well as the valuation of public goods based on well-being data as promising applications of well-being evidence-based public policy. Based on people's (ex post) judgments of their well-being, it is particularly attractive to evaluate policies in areas of life in which people might be boundedly rational. In these areas, observed behavior is potentially a poor guide to learn about the effects of policies on individuals' welfare.

The "new" approach in the study of public policy should – in our opinion – not be understood as a new paradigm of public policy, though. Insights from this new science are, instead, a complementary – and most valuable – source of evidence for the existing democratic process of political decision-making. While it is tempting to adopt a social welfare maximization approach, this new science does not overcome the criticism against it: It is faulted for disregarding citizens as ultimate decision-makers, and for seeing governments as benevolent maximizers of social welfare, which it captures in terms of measured subjective well-being. It neglects the fact that people differ in their evaluation about what measures they consider to reflect their normative preferences. Moreover, the role that the processes of adaptation and aspiration should play in policy decisions has to be clarified. Finally, the social welfare maximization approach based on subjective well-being neglects the negative incentives for manipulating empirical welfare measures.

Empirical well-being research is, however, well equipped to contribute to a constitutional perspective of public policy by seeking basic rules that are conducive to the pursuit of individual well-being (Frey & Stutzer, 2012). In this paradigm, the fundamental rules and institutions are set at the constitutional level behind the veil of uncertainty. They determine the decisions taken in the current politico-economic process. The legitimacy of political action finally rests on the voluntary agreements on these fundamental rules by the citizens involved. In particular, the sovereignty of the individual includes the individual's choice on how to best pursue his or her personal well-being. This holds both for the private as well as the collective realm.

Accordingly, the political process should be institutionally structured so that people's interests become the principal controlling force in politics. Fundamental institutions, or rules of the game, have to be established which provide politicians and public bureaucrats with incentives and information to adequately respond to people's preferences. Well-being research provides insights about how and to what extent institutions have systematic effects on indicators of subjective well-being. The focus is on rules and institutions which include written constitutional rules, state laws, social norms, traditions and even self-binding mechanisms (for references to the respective literature see Frey & Stutzer, 2017).

According to this constitutional view, the results gained from well-being research will provide productive inputs for the political decision-making process. These inputs then have to prove themselves in political competition and in public and political debates. An ideal outcome is envisaged, where the integration of this research in the political process will enable people to actively promote and realize their idea of the good life, both individually and collectively.

Footnotes

[1]There is an enormous body of literature that is concerned with understanding subjective well-being. In economics, there are a series of monographs including, e.g., Frey and Stutzer (2002a), Layard (2005), Frey (2008), and Graham (2011), as well as review articles including, e.g., Frey and Stutzer (2002b), Dolan, Peasgood, and White (2008), or Stutzer and Frey (2010). For articles from a psychological perspective, see, e.g., Diener and Biswas-Diener (2008), or the collections in David, Boniwell, and Conley Ayers (2013), or Sheldon and Lucas (2014). Good overviews about cross-country comparisons of well-being are provided in the five World Happiness Reports published so far (Helliwell, Layard, & Sachs, 2017).

[2]Other sources that discuss many issues related to public policy and subjective well-being are Diener, Lucas, Schimmack, and Helliwell (2009), Hämäläinen and Michaelson (2014), or the report of the Legatum Institute (O'Donnell, Deaton, Durand, Halpern, & Layard, 2014). In this chapter, we draw on previous work by Stutzer (2009), and Frey and Stutzer (2010, 2012, 2016, 2017) and develop it further.

[3]Subjective well-being is an umbrella term for different measures proposed in the literature, ranging from affective measures such as experience of fear, happiness, joy, or sorrow to evaluative measures such as life satisfaction or purpose in life. For a definition and description of different indicators, see, e.g., Kahneman and Krueger (2006), Diener, Inglehart, and Tay (2013), Tay, Chan, and Diener (2014). For a recent empirical comparison of different measures see, e.g., Clark (2015).

[4]The discussion and development of aggregate measures of personal well-being has recently been

promoted in many countries; for example, by the French Stiglitz-Sen-Fitoussi Commission in 2009, or the Enquete Commissions on Growth, Prosperity and Quality of Life in Germany between 2011 and 2013 (Enquete-Kommission, 2013). Furthermore, new statistics divisions devoted to measuring well-being and progress have been set up by the OECD and many countries, such as the UK, Australia, or Canada, now prepare special reports based on subjective measures of quality of life.

[5]For a review about relative income and subjective well-being, see Clark, Frijters, and Shields (2008).

[6]For recent empirical evidence on position of externalities of consumption, especially of luxury goods, see, for example, Winkelmann (2012) or Perez-Truglia (2013).

[7]Examples of other domains are political power, education, leisure, or status seeking in other activities outside economics and politics, such as sports or the arts (see Frey & Stutzer, 2016, for a discussion).

[8]The contingent valuation method, for example, might overstrain individuals, because the questions asked are hypothetical, and the valuation task is unfamiliar. The respondents tend to be "primed" to the particular issue in question, which might not otherwise concern them at all. Moreover, the respondents may disregard their budget constraints and the substitutes available. The likely result is, thus, a symbolic valuation of people expressing attitudes (Kahneman & Knetsch, 1992). Furthermore, the strategic behavior of respondents may also bias the answers. Revealed preference approaches usually require the observation of undistorted equilibrium prices.

[9]This and further methodological issues are, for example, discussed in Kahneman and Sugden (2005), Welsch and Kühling (2009), and Frey et al. (2010).

[10]A growing body of research has developed in the interdisciplinary field of economics and psychology that investigates systematic deviations from utility maximizing behavior (for reviews, see, e.g., Kahneman, 2003; Camerer, Loewenstein, & Rabin, 2004; Frey & Stutzer, 2007; DellaVigna, 2009; or Rabin, 2013). Thereby, a closer link between the study of suboptimal choices and the research on subjective well-being is, for example, established in (Hsee, Rottenstreich, & Stutzer, 2012).

[11]Allcott and Sunstein (2015) define negative internalities as being the costs individuals impose on themselves by taking actions that are not in their own best interest. Examples are time-inconsistent behavior due to self-control problems or a distorted allocation of resources due to utility misprediction (see Section 5.3).

[12]This finding is contrary to a prominent result published in the study by Gruber and Mullainathan (2005). In two longitudinal analyses for the United States and Canada, they find that tobacco taxes are positively related to smokers' happiness. Similarly, Leicester and Levell (2016) find a positive differential effect of higher cigarette taxes on smokers compared to non-smokers in the United Kingdom. They also study smoking bans. For the identification of their effect, they rely on the different introduction dates across the four regions in the UK. They find no significant effects on mental well-being.

[13]These scale changes are discussed in the literature under different terms, such as scale norming (Frederick & Loewenstein, 1999), response shift (Schwartz & Sprangers, 1999), or scale of reference bias (Groot, 2000).

[14]Conti and Pudney (2011) provide an example as evidence of the relevance of social desirability. They find that people report higher values of satisfaction with their job in a face-to-face interview than when self-completing a questionnaire. For a recent review on the determinants of the social desirability bias, see Krumpal (2013).

[15]This question is related to the prominent work by Brickman and Campbell (1971), which proposes the idea of a hedonic set point which is regained after a process of adaptation: People become used to a new situation or repeated stimuli and thereby return to their innate level of experienced well-being. Their conclusions provoked substantial empirical research on adaptation.

[16]A distorted allocation primarily occurs if the bias is not uniform across all goods and activities, because the individual preference ordering of alternatives is altered (see Frey & Stutzer, 2014, for a discussion of the relevance of such an asymmetry for utility misprediction). The presence of an asymmetry is indicated by a well-known claim by Tibor Scitovsky (1976), namely that people tend to overinvest in comfort to which one adapts strongly and to underinvest in creative activities where less adaptation is involved. Along this line of reasoning, Frank (1999) claims that, due to incomplete information about the extent to which we adapt to different goods and experiences, we observe a misallocation towards working and consuming

too much.

[17]Ubel, Loewenstein, and Jepson (2005) report findings of experiments which suggest that asking people to reflect on adaptation is sufficient to reduce potential systematic errors in affective forecasts when people predict their quality of life with respect to disability or living in a better climate.

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