

## THE THIRST FOR HAPPINESS

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**Abstract:** This paper provides a primer on happiness economics. The survey intends to indicate the general flavor of this new approach to economics. Moreover, it presents a selection of possible applications of economic-happiness research. The fundamental idea of relative utility is discussed by illustrating it with a particular case, namely the relationship between income and happiness. Happiness research is also a new tool for studying individual welfare in the context of a cost-benefit analysis. It allows researchers to capture the good and bad effects on the public. This is shown by the example of a major social issue, terrorism. The intention is to convey to the reader that happiness research opens new avenues to tackle old questions and opens new possibilities to address issues that have been difficult or even impossible to address empirically.

**Keywords:** happiness, utility, relative position, cost-benefit analysis, life-satisfaction approach

This paper provides a primer on happiness economics. The survey section in the first part is kept short because the authors provided extensive reviews in journals and in a book (Frey & Stutzer 2002a, b, 2005; Frey, 2007). Here we want to indicate the general flavor of this new approach in economics. The second part takes up the fundamental idea of relative utility, illustrating it for a particular case, namely the relationship between income and happiness. The third part looks at happiness research as a new tool for studying individual welfare in the context of cost-benefit analysis. Happiness research allows us to capture the effects of public goods and public bads on experienced utility. This is illustrated with the example of a major social problem, terrorism.

### ECONOMIC HAPPINESS RESEARCH

Research on happiness has been one of the most stimulating new developments in economics in recent years. The pursuit of happiness is a central aspect of human behavior. It follows that economics is – or should be – about individual happiness. In particular, the question is how economic growth, unemployment, and inflation, as well as institutional factors, such as good governance, affect individual well-being. Economic activity is certainly not an end in itself but has value only insofar as it contributes to human happiness. However, economists have been reluctant to carry out any direct study on

individual happiness. It is argued that no cardinal measurement of utility is needed to analyze how individuals react to changes in relative prices. The axiomatic revealed preference approach holds that the choices made provide all the information required to infer the utility of outcomes. Welfare judgments can be made by resorting to the Pareto criterion, and, therefore, no comparison of welfare levels among individuals is required.

This view is still predominant in economics. However, numerous scholars have challenged standard economic theory from different angles. There are countless examples of non-objectivist theoretical analyses in economics. They incorporate emotions, self-signaling (self-esteem), goal completion, mastery, meaning, and status. Moreover, the outcome orientation in standard economics is supplemented with individuals' concerns about the processes leading to outcomes.<sup>1</sup> In the vast literature on anomalies in decision-making, it is questioned whether utility can generally be derived from observed choices. The same reservation applies to intertemporal choices when individuals suffer from problems of self-control.<sup>2</sup> The exclusive reliance on an objectivist approach by standard economic theory is thus open to doubt, both theoretically and empirically. In any case, it restricts the possibility of understanding and influencing human well-being.

### ***The Subjective Approach to Utility***

The subjective approach to utility offers a fruitful, complementary path to study the world. It allows well-being to be assessed directly. It follows an interpretation of utility in hedonistic terms, broadly understood. This is emphasized by the term "experienced utility" as proposed by Kahneman et al., (1997). There are many research questions for which it is useful to take experienced utility measured by reported subjective well-being as a proxy for decision utility. It creates a basis for explicitly testing fundamental assumptions and propositions in economic theory and developing and testing new and broader theories of human behavior. If, however, the focus is on the economic consequences of miscalculating utility (Stutzer & Frey, 2007), insights are derived from systematic divergences between the two concepts.

A subjective view of utility recognizes that everybody has his or her own ideas about happiness and the good life and that observed behavior is an incomplete indicator for individual well-being. Accepting this view, individuals' happiness can nevertheless be captured and analyzed: People can be asked how satisfied they are with their lives. It is a sensible tradition in economics to rely on the judgment of the people directly involved. People are reckoned to be the best judges of the overall quality of their lives, and it is a straightforward strategy to ask them about their well-being.

### ***Measuring Individual Subjective Well-Being***

Due to extensive work by numerous psychologists spanning many decades, the measurement of experienced utility has made great progress (see the surveys by Diener et al., 1999; Kahneman et al., 1999 and, for a recent discussion, Kahneman & Krueger, 2006). Several indicators of subjective well-being have been designed, relying on different measurement techniques: global evaluations of individual life satisfaction based on representative surveys; the Experience Sampling Method, collecting information on individuals' actual experience in real time in their natural environments; the Day Reconstruction Method, asking people to reflect on how satisfied they felt at various times during the

day; and Brain Imaging, using functional magnetic resonance imaging (fMRI) to scan an individual's brain activities for correlates of positive and negative effect.

Most of the empirical work on happiness research in economics undertaken so far has been based on representative, large-scale sampling of individuals' global evaluations of their life satisfaction. A prominent example is the question in the German Socio-Economic Panel (GSOEP). Study that asks "how satisfied are you with your life, all things considered?" Responses range on a scale from 0 to 10 or from "completely unsatisfied" to "completely satisfied." The great advantage of this measurement approach is its good performance compared to its cost, as well as its availability for a large number of countries and time periods. For many tasks, self-reported measures of life satisfaction have proved to perform in a satisfactory way, especially for the issues economists are mostly interested in. So far, it is the best empirical approximation to the concept of individual welfare used in economic theory that is widely available. The future will tell to what extent and for which specific issues happiness researchers will rely on the various measurement approaches.

There is now a wide-spread consensus among scholars that experienced utility and well-being can be measured with some degree of accuracy (Kahneman et al., 1999; Diener 2005; Kahneman and Krueger, 2006). One indicator that such measurements capture important aspects of well-being in a credible way is that they correlate with behavior and features generally associated with happiness. Reliability studies have found that reported subjective well-being is moderately stable and sensitive to changing life circumstances. Consistency tests reveal that happy people smile more often during social interactions, are rated as happy by friends, family members, and spouses, express positive emotions more frequently, are more optimistic, are more sociable and extroverted, and sleep better (Frey & Stutzer, 2002b).

There is still much room for improvements in the quality and the understanding of happiness measures. One question is whether people's instantaneous level of happiness can be captured by self-reported measures of well-being or whether there is a difference between people's hedonic experiences and their explicit reflective appraisals of experiences in reported subjective well-being (Schooler et al., 2003). Sometimes people are fully engaged in challenging activities and experience great pleasure (or flow). Because of the very nature of this situation, people will never assess and report their well-being when in such a state and, thus, set boundaries for the measurement of instant utility. New insights will be provided when we know more about correlations between reported subjective well-being and physiological measures of well-being (Blanchflower & Oswald, 2007).

Another question is to what extent the 'traditional' measures of subjective well-being accurately capture the different notions of happiness and individual well-being put forward in the literature on the good life (Ryan & Deci, 2001). A common concern refers to the emphasis of momentary positive affects in survey questions on individual well-being. Hedonic well-being is not necessarily the same as happiness. According to the eudaimonic view of happiness, people should live according to their true self "daimon." The underlying factors producing well-being can be seen to be autonomy, competence, and relatedness. Given the possible shortcomings of happiness measures today, it should at the same time be borne in mind that the required quality of happiness data depends on its intended use. Moreover, the quality of the happiness data should be compared with alternative concepts of measuring people's level of well-being.

### ***The Correlates of Happiness***

Provided that reported subjective well-being is a valid and empirically adequate measure for human well-being, it can be modeled in a microeconomic happiness function  $W_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$ . Thereby, true well-being serves as the latent variable.  $X = x_1, x_2, \dots, x_n$  are known variables, like socio-demographic and socioeconomic characteristics, or environmental, social, institutional and economic conditions for individual  $i$  at time  $t$ . The model allows for the analysis of each factor that is correlated with reported subjective well-being separately. This approach has been successfully applied in numerous studies on the correlates of happiness. Technically, multiple regression analyses are conducted. As the dependent variable is measured on a ranking scale, normally ordered logit or probit estimation techniques are applied.

The result is a substantial number of new and insightful empirical findings. Present research provides some preliminary insights on issues dealing with, for example, the relationship between happiness and income, unemployment, inflation, inequality, and democratic institutions (for overviews, see Di Tella & MacCulloch, 2006; Easterlin, 2002; Frey & Stutzer, 2002a,b; Layard, 2005; Oswald, 1997; van Praag & Ferrer-i-Carbonell, 2004).

### **INCOME AND HAPPINESS: THE ROLE OF INCOME ASPIRATIONS**

Persons with higher income have more opportunities to attain whatever they desire; in particular, they can buy more material goods and services. It is, therefore, often taken as self-evident that higher income and consumption levels provide higher experienced utility or happiness. This conclusion also follows from the concept of utility in economics, which is based on a very simple psychological notion. Economics assumes that people always know what is best for themselves and that they make decisions accordingly. Moreover, it is assumed that people's satisfaction depends on what they have in absolute terms. Happiness research allows testing this notion empirically.

### ***Are People with a High Income Happier? Paradoxical Empirical Findings***

The relationship between income and happiness at a particular point in time and place (country) has been the subject of a large empirical literature. As a robust and general result, it has been found that richer people, on average, report higher subjective well-being (see Clark et al., 2006). The relationship between income and happiness, both in simple regressions and when a large number of other factors are controlled for in multiple regressions, proves to be statistically (usually highly) significant. With regard to this specific evidence, the standard economic view is upheld in happiness research.

However, there is a second way to study the relationship between income and happiness. This refers to the question whether an increase in income over time raises happiness. A striking and curious relationship is observed. There is systematic evidence that people in industrialized countries are not becoming happier over time, despite economic growth (Blanchflower & Oswald, 2004; Easterlin, 1995, 2001). Consider, for example, Figure 1 for Japan.

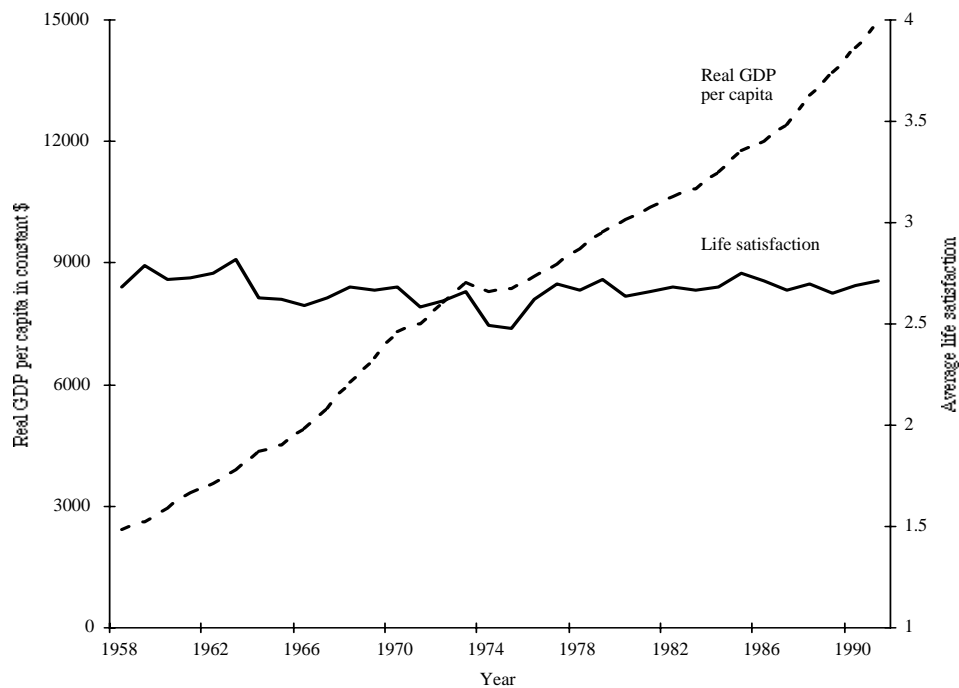


Figure 1. Satisfaction with life and income per capita in Japan between 1958 and 1991.

Sources: Penn World Tables and World Database of Happiness.

Between 1958 and 1991, income per capita in Japan rose by a factor of six. This is probably the most spectacular growth in income since World War II. The rise was reflected in almost all households, as they began to have an indoor toilet, a washing machine, telephone, color television, and a car. The open scissors figure also shows, however, that this tremendous rise in material well-being was not accompanied by an increase in average satisfaction with life. In 1958, average life satisfaction rated on a 4-point scale was 2.7. In 1991, after more than 30 years of increasing affluence, average life satisfaction still scores 2.7 points.

What can be inferred from these and similar observations in other industrial countries? One position that can be taken is to disregard the descriptive evidence (1) because there are other Western countries, like Denmark, Germany and Italy, that experienced substantial real per capita income growth as well as a (small) increase in reported satisfaction with life in the 1970s and 80s (Diener et. al., 2000) and (2) because it depends on the observation period whether a small increase or decrease in reported subjective well-being is measured. Moreover, the relationships presented between income and happiness over time are not analyzed *ceteris paribus*. However, for the United States, a negative time trend is also found when individual characteristics are controlled (Blanchflower & Oswald, 2004). Another position that can be taken is to accept that there is no clear-cut trend, positive or negative, in self-reported subjective well-being over periods of 20 to 30 years in rich countries. The results, rather, indicate that there is more to subjective well-being than just the level of income.

***The Missing Variable: Income Aspirations***

In order to overcome the reported paradox, happiness research in economics is exploring different aspects of a psychologically sounder concept of utility. Two processes are emphasized. First, one of the most important processes people go through is that of adjusting to past experiences. Human beings are unable and unwilling to make absolute judgments. Rather, they are constantly drawing comparisons from the past or from their expectations of the future. Thus, we notice and react to deviations from reference levels.

Additional material goods and services initially provide extra pleasure, but it is usually only transitory. Higher happiness with material things wears off. Satisfaction depends on change and disappears with continued consumption. This process, or mechanism, that reduces the hedonic effects of a constant or repeated stimulus, is called adaptation, and it is this process of hedonic adaptation that makes people strive for ever higher aspirations. Second, there are social comparisons with relevant others. It is not the absolute level of income that matters most, but rather one's position relative to other individuals. People with a higher income have in particular also a higher relative income and, thus, a higher status in society. Socially comparative or even competitive processes in consumption complement processes of hedonic adaptation.

Many economists in the past have noted that individuals compare themselves to significant others with respect to income or consumption. Thorstein Veblen (1899) coined the notion of "conspicuous consumption," serving to impress other persons. The "relative income hypothesis" has been formulated and econometrically tested by James Duesenberry (1949), who posits an asymmetric structure of externalities. People look upwards when making comparisons. Wealthier people impose a negative external effect on poorer people, but not vice versa. As a result, savings rates depend on the percentile position in the income distribution and not solely on the income level, as in a traditional savings function.

It is suggested that the two processes make people strive for ever higher aspirations. Together, they can also explain why persons with high income at a given point in time are happier than those with low income (social comparison effect), while there is no clear statistical relationship between income per capita and average life satisfaction in industrialized countries over time (adaptation effect). There is now also direct empirical evidence for the important role of income aspirations in individual welfare from two empirical studies for Germany and Switzerland (Stutzer, 2004, Stutzer & Frey, 2004). This is made possible by using two data sets that both include individual data on reported satisfaction with life as a proxy measure for experienced utility, as well as income evaluation measures as proxies for people's aspiration levels.<sup>3</sup>

It is found that higher income aspirations reduce people's satisfaction with life. In Switzerland and the New German Laender, the negative effect of an increase in the aspiration level on well-being is of a similar absolute magnitude as the positive effect on well-being of an equal increase in income.<sup>4</sup> This suggests that subjective well-being depends largely on the gap between income aspirations and actual income and not on the income level as such. Thus, the higher the ratio between aspired income and actual income, the less satisfied people are with their life, *ceteris paribus*. This supports the notion of a relative utility concept.

Both studies also explore the determinants of income aspirations. The econometric results show

that, consistent with processes of adaptation, income aspirations increase with personal income. However, the effects of higher income on individual well-being at a fixed point in time are not completely counterbalanced by higher aspirations. In fact, for rich people, the relative gap between income aspirations and actual income is smaller. This can explain the positive correlation between income and reported subjective well-being. For the analysis of relative income concerns in the Swiss data set, individuals' aspirations are merged with data on aggregate income in the community where people live. The results indicate that a higher average income in the community increases people's levels of aspiration. This effect cannot be explained by a higher cost of living alone. It is shown that the aspiration levels of community members who interact within the community react much more to changes in average income than those of members who do not interact.

What are the consequences of research on relative income? The empirical basis is still relatively small to be able to draw firm implications for economic theory and economic policy. Caution is required because the implications might be far-reaching. However, it might be worthwhile to consider household theory, in which people's desires increase according to what they get. In this framework, the marginal utility of income would no longer be defined, as the utility function changes with the income level. It would be interesting to study in greater depth what implications income aspirations have, for instance, on redistributive taxation or on public policy in general.

### **A NEW APPROACH TO COST-BENEFIT ANALYSIS**

#### ***The Life Satisfaction Approach***

The benefits from public goods are inherently difficult to measure and a wide variety of different approaches for the measurement of preferences have been developed (see Freeman, 2003). With reported subjective well-being as a proxy measure for individual welfare, it is now possible to directly evaluate public goods in experienced utility terms. Moreover, by measuring the marginal utility of a public good or the marginal disutility of a public bad, as well as the marginal utility of income, the trade-off ratio between income and the public good can be calculated. We call this the life satisfaction approach (LSA).

The LSA can be used to value a wide range of different public goods and bads, negative and positive externalities. Hitherto, the approach was exclusively used to value externalities in the environmental realm. Van Praag and Baarsma (2004) analyze the effect of noise nuisance in the area of the Amsterdam Airport. Welsch (2002), Rehdanz and Maddison (2003) identify a negative effect of environmental degradation on average life satisfaction. The life satisfaction approach has several advantages over the standard methods currently used, that is, the revealed preference methods and the stated preference methods (for a discussion see Frey et al., 2004).

#### ***The Case of Terrorism***

Citizens' well-being must be expected to be negatively affected by terrorism. People living in a country rife with terrorism are less happy than those living under more orderly political conditions. A good example is the Dominican Republic in 1962 where, after president Trujillo's murder, the political situation was very unsettled and political chaos was a real threat. The level of life satisfaction measured

in that country was the lowest ever recorded, namely 1.6 on the normal 0 to 10 scale. By way of contrast, in politically stable democracies, such as Switzerland, Norway or Denmark, the population expresses high life satisfaction. The corresponding values were, for example, in the 1990s 8.16 for Denmark, 8.02 for Switzerland and 7.66 for Norway. Thus, happiness and political stability seem to be closely related.<sup>5</sup>

The causation may, however, again run in both directions; while it seems obvious that political unrest is dissatisfying to people, it also stands to reason that dissatisfied people resort to demonstrations, strikes, and even terrorist actions, thereby creating political instability. However, it would be a romantic view (see Tullock, 1987) to assume that revolutions are normally caused by people's unhappiness with existing political conditions. Most coups d'état, and even revolutions, are undertaken by competing political clans, parties, or the military.

The LSA provides a tool to systematically value the costs of terrorism. Based on panel data, it is possible to compare the life satisfaction of the population in particular regions and cities affected by terrorism to the remaining parts of a country over time. This novel approach is illustrated here for the case of France but has been applied to more countries (Frey et al., 2004). Life satisfaction data are taken from the Euro-Barometer Survey Series (1970-1999); the variable is the categorical response to the following question: "On the whole, are you very satisfied [4], fairly satisfied [3], not very satisfied [2], or not at all satisfied [1] with the life you lead?" An indicator for the salience and intensity of terrorist activity is constructed representing the number of terrorist incidents. The two regions of Ile-de-France (including Paris) and Provinces-Alpes-Côte-d'Azur (which includes Corsica in the Euro-Barometer Surveys Series) are compared to the rest of France for the years 1973 to 1998.

Based on these data sets the life satisfaction of an individual living in a particular region at a particular time is explained by differences in the level of terrorism across regions and over time, the individual's household income, other personal and socio-demographic characteristics, as well as region and time fixed effects. The estimation results suggest that the number of terrorist attacks has a statistically significant negative effect on the reported life satisfaction. For 15 terrorist attacks (i.e. approximately the average number of attacks in Paris during the period studied), an average reduction in satisfaction with life by 0.04 units on the four-point scale of life satisfaction is estimated. This effect is about a fifth of the effect of being unemployed rather than employed. Thus, a frequently used indicator for terrorism is correlated with people's subjective well-being in a sizeable way.

The estimated coefficients can be used to calculate the hypothetical willingness-to-pay for a discrete change in the level of terrorism. For the purpose of comparison, the difference in terrorism between living in the region Ile-de-France (Paris) and living in the rest of France (except Provence-Alpes-Côte d'Azur) is considered. Accordingly, a resident of Paris (with average household income) would be willing to pay around 14% of his income for a reduction in terrorist activity to a level that prevails in the more peaceful parts of the country. These compensations are comparable to those identified by Blomquist, Berger and Hoehn (1988) on the labor and housing markets for individuals living in the U.S. county with the highest rate of violent crime. This exploratory application demonstrates that life satisfaction data are well suited to assess the utility loss of the population due to terrorism.



### CONCLUDING REMARKS

This contribution presents only a selection of possible applications of economic happiness research. Many more have been undertaken. No attempt has been made to be comprehensive. Rather, the intention was to convey to the reader that happiness research opens new avenues to tackle old questions, and opens new possibilities to address issues which so far have been difficult or even impossible to address empirically.

### NOTES

1. An introduction to the concept of procedural utility is provided in Frey, Benz and Stutzer (2004).
2. Criticism of many aspects of traditional economics is developed in so-called “behavioral economics” or “economics and psychology” (see, e.g., Camerer et al. 2003, Frey and Stutzer 2001, 2007, Rabin 1998).
3. People are asked, “Please try to indicate what you consider to be an appropriate amount for each of the following cases. Under my/our conditions, I would call a net household income per [month] of: about \_\_\_\_\_ very bad [...] about \_\_\_\_\_ very good. Please enter an answer on each line [...]” (van Praag 1993).
4. The negative effect of an increase in aspirations is relatively smaller in absolute terms in the Old German Laender.
5. We are, of course, aware that other factors matter too for the observed difference and might even exclusively determine the gap.

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