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## What can economists learn from happiness research?

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# WHAT CAN ECONOMISTS LEARN FROM HAPPINESS RESEARCH?

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(revised version dated 30 October 2001)

## *1 Why Study Happiness?*

Happiness is generally considered to be an ultimate goal in life; virtually everybody wants to be happy. The United States Declaration of Independence of 1776 takes it as a self-evident truth that the “pursuit of happiness” is an “unalienable right”, comparable to life and liberty. It follows that economics is – or should be – about individual happiness. In particular, the question is how do economic growth, unemployment and inflation, as well as institutional factors such as good governance, affect individual well-being?

In addition to this intrinsic interest, there are three major reasons for economists to consider happiness. The first is economic policy. At the micro-level, it is often impossible to make a Pareto-optimal proposal, because a social action entails costs for some individuals. Hence an evaluation of the net effects, in terms of individual utilities, is needed. On an aggregate level, economic policy must deal with trade-offs, especially those between unemployment and inflation. Using happiness data for twelve European countries and the period 1975 to 1991, it has (cautiously) been calculated that a one percentage point increase in the unemployment rate is marginally compensated for by a 1.7 percentage point decrease in inflation (Rafael Di Tella, Robert MacCulloch, and Andrew Oswald 2001). This result significantly deviates from the “misery index” which, for lack of information, has simply been defined as the sum of the percent unemployment rate and the percent annual inflation rate. Another trade-off that can be

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calculated on the basis of estimated happiness functions is the compensating variation for being unemployed rather than holding a job. For the European countries just referred to, a move from the lowest income quartile to the highest income quartile would not be enough to offset the adverse effect of unemployment, suggesting that unemployed people suffer high non-pecuniary cost. Happiness research can thus usefully inform economic policy decisions.

A second reason why happiness is of interest to economists is the effect of institutional conditions, such as the quality of governance and the size of social capital on individual well-being. Research for 49 countries in the 1980s and 90s suggests that there are substantial well-being benefits from factors such as improved accountability, effectiveness and stability of government, the rule of law and the control of corruption. The data show that the effects flowing directly from the quality of institutions are often much larger than those which flow through productivity and economic growth (John Helliwell 2001).

A third reason for happiness research is to understand the formation of subjective well-being. This sheds new light on the basic concepts and assumptions in economic theory, as for instance whether people can successfully predict their own future utilities (George Loewenstein, Ted O'Donoghue, and Matthew Rabin 2000) or whether individual self-assessments of predicted, instant and remembered utility are consistent (Daniel Kahneman, Peter Wakker, and Rakesh Sarin 1997). Moreover, it may help to solve empirical puzzles that conventional economic theories find it difficult to explain. A paradox needing explanation is, for example, that in several countries since World War II real income has drastically risen but self-reported subjective well-being<sup>2</sup> of the population has not increased or has even fallen slightly. In the United States, for example, between 1946 and 1991, per capita real income rose by a factor of 2.5 (from approximately 11,000 to 27,000 US \$ in 1996 US \$), but over the same period of time happiness, on average, remained constant.<sup>3</sup> Moreover, at a given point-of-time, higher income is positively associated with people's happiness. Yet, over the life cycle, happiness stays more or less unchanged. Another paradox to be explained is that, since ancient times, work has been considered a burden for individuals to bear, but empirical

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<sup>2</sup> Subjective well-being is the scientific term in psychology for an individual's evaluation of his or her experienced positive and negative affect, happiness or satisfaction with life. They are separable constructs and the precise terminology will be used whenever empirical research is cited. Otherwise the terms happiness, well-being, and life satisfaction are used interchangeably.

<sup>3</sup> This is a "well-established finding" (Richard Easterlin 2001, p. 472, 1974, 1995; David Blanchflower and Oswald 2000; Ed Diener and Shigehiro Oishi 2000; and Charles Kenny 1999).

research on happiness strongly suggests that being unemployed, even when receiving the same income as when employed, depresses people's well-being markedly.<sup>4</sup>

Many happiness research findings add new knowledge to what have become standard views in economics, while other results challenge it. One finding is the consistently large influence of non-financial variables on self-reported satisfaction. This does not mean that economic factors, such as income, employment or price stability are unimportant, but they suggest that the recent interest in issues, such as good governance or social capital, are well founded. The findings also enrich our knowledge on discrimination concerning gender, ethnicity and races, as well as age.

Section 2 discusses the relationship between happiness and utility. It is argued that reported subjective well-being is a satisfactory empirical approximation to individual utility. Sections 3 to 5 report how the economic variables of income, unemployment and inflation affect happiness. Section 6 shows that, in addition to current economic conditions, institutional factors, in particular the type of democracy and the extent of government decentralization, also systematically influence how satisfied individuals are with their life. The last section 7 provides a summary and discusses the implications for economic policy and economic theory.

## *2 Happiness and Utility*

### *2.1 Historical Sketch*

For a long time, the study of happiness has been the province of psychology.<sup>5</sup> Only recently has this psychological research been linked to economics. The pathbreaking contribution by Easterlin (1974) was noted by many economics scholars, but at the time found few followers. General interest in the measurement and the determinants of subjective reported well-being has been raised by a symposium (Robert Frank 1997; Yew-Kwang Ng 1997; and Oswald 1997). Since the late 1990s, economists have started to contribute large scale empirical analyses of the determinants of happiness in different countries and periods.

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<sup>4</sup> In addition to the literature already cited, see e.g. Blanchflower (1996), Andrew Clark and Oswald (1994), Frey and Stutzer (1999), and Liliana Winkelmann and Rainer Winkelmann (1998).

<sup>5</sup> See, for example, Michael Argyle (1987), Diener, Eunkook Suh, Richard Lucas, and Heidi Smith (1999), Kahneman, Diener and Norbert Schwarz (1999), Alex Michalos (1991), David Myers (1993), Richard Ryan and Edward Deci (2001), Fritz Strack, Argyle and Schwarz (1991). There are also contributions by sociologists, in particular Ruut Veenhoven (for example 1993), and political scientists (Ronald Inglehart 1990, Robert Lane 2000).

This paper does not intend to provide a general survey on happiness research (which has already been done by Kahneman, Diener and Schwarz 1999 and Frey and Stutzer 2002). Rather, we wish to show which insights may be important, if not necessary, for integrating into economics.

## 2.2 *Objective and Subjective Utility*

Standard economic theory employs an “objectivist” position, based on observable choices made by individuals. Individual utility only depends on tangible goods and services and leisure. It is inferred from behavior (or revealed preferences), and is in turn used to explain the choices made. This “modern” view of utility has been influenced by the positivistic movement in philosophy. Subjectivist experience (e.g. captured by surveys) is rejected as being “unscientific”, because it is not objectively observable. Most importantly, cardinality of utility and interpersonal comparability are not necessary for positive demand theory which, following Occam’s razor, constitutes a great advantage (Lionel Robbins 1932; John Hicks 1934; Roy Allen 1934). The axiomatic revealed preference approach holds that the choices made provide *all* the information required to infer the utility of outcomes. Moreover, the axiomatic approach is not only applied to derive individual utility, but also to measure social welfare. To do so, social welfare comparison is based on the consumption behavior of households (Daniel Slesnick 1998; for a critical analysis Ng 1997, 2001).

The positivistic view still dominates in economics. Amartya Sen (1986, p. 18) observes that “the popularity of this view in economics may be due to a mixture of an obsessive concern with observability and a peculiar belief that choice [...] is the only human aspect that can be observed”. Its dominance is reflected in the contents of microeconomic textbooks. However, not all contemporary economists subscribe to this view.

Numerous scholars have challenged standard economic theory from different angles. There are countless examples of non-objectivist theoretical analyses in economics. They incorporate emotions (e.g. Jon Elster 1998), self-signaling (self-esteem), goal completion, mastery and meaning (e.g. Loewenstein 1999) or status (e.g. Frank 1985). In order to explain human behavior, interdependent utility functions are considered rather than interpersonally independent ones (e.g. Clark and Oswald 1998). This challenges established welfare propositions (e.g. Michael Boskin and Evtan Sheshinski 1978; Heinz Holländer 2001; and Richard Layard 1980). In the vast literature on anomalies in decision-making (e.g. Richard Thaler 1992), it is questioned whether utility can generally be derived from observed choices. Finally, consequentialism, of which utilitarianism is a special case, is not the only aspect

relevant for behavior, but procedural utility should also be considered (Sen 1995, 1997; Marc Le Menestrel 2001). 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 offers a fruitful *complementary* path to study the world. Firstly, subjective well-being is a much broader concept than decision utility; it includes experienced utility, as well as procedural utility, and is for many people an ultimate goal. That is not the case for other things we may want, such as job security, status, power, and especially money (income). We do not want them for themselves, but rather to give us the possibility of making ourselves happier. Secondly, the concept of subjective happiness allows us to capture human well-being directly. This creates a basis for explicitly testing fundamental assumptions and propositions in economic theory.

### 2.3 *Measuring Utility*

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 life. It is a sensible tradition in economics to rely on the judgement of the persons directly involved. Therefore, people are reckoned to be the best judges of the overall quality of their life, and it is a straightforward strategy to ask them about their well-being. With the help of a single question or several questions on global self-reports, it is possible to get indications of individuals' evaluation of their life satisfaction or happiness. Behind the score indicated by a person lies a cognitive assessment to what extent their overall quality of life is judged in a favorable way (Veenhoven 1993). People evaluate their level of subjective well-being with regard to circumstances and comparisons to other persons, past experience and expectations of the future. Measures of subjective well-being<sup>6</sup> can thus serve as proxies for "utility".

Individuals' happiness or life satisfaction can be captured in large surveys. A prominent example of a single-item question on a three-point scale is in the *General Social Surveys* (James Davis, Tom Smith, and Peter Marsden 2001). It asks the question: "Taken all together,

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<sup>6</sup> Subjective well-being is an attitude consisting of the two basic aspects of cognition and affect. "Affect" is the label attached to moods and emotions. Affect reflects people's instant evaluation of the events that occur in their lives. The cognitive component refers to the rational or intellectual aspects of subjective well-being. It is usually

how would you say things are these days - would you say that you are very happy, pretty happy, or not too happy?" Life satisfaction is assessed on a scale from one (dissatisfied) to ten (satisfied) in the *World Values Survey* (Inglehart et al. 2000). People answer the question: "All things considered, how satisfied are you with your life as a whole these days?". The *Eurobarometer Surveys*, covering all members of the European Union, asks a similar question: "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?" Among the multiple-item approaches, the most prominent is the *Satisfaction With Life Scale* (William Pavot and Diener 1993), composed of five questions, rated on a scale from one to seven.<sup>7</sup>

As subjective survey data are based on individuals' judgements, they are prone to a multitude of systematic and non-systematic biases. It therefore needs to be checked whether people are indeed capable and willing to give meaningful answers to questions about their well-being. Moreover, reported subjective well-being may depend on the order of questions, the wording of question, scales applied, actual mood and the selection of information processed. The relevance of these errors, however, depends on the intended usage of the data. Often, the main use of happiness measure is not to compare levels in an absolute sense but rather to seek to identify the determinants of happiness. For that purpose, it is neither necessary to assume that reported subjective well-being is cardinally measurable nor that it is interpersonally comparable. The subjective data can be treated ordinally in econometric analyses so that higher reported subjective well-being reflects higher well-being of an individual. Whether happiness measures meet this condition has been widely assessed in psychological evaluation studies.<sup>8</sup> It has, for example, been shown that different measures of happiness correlate well with one another (e.g. Meredith Fordyce 1988). Factor analyses of self- and non-self-reports of well-being have revealed a single unitary construct underlying the measures suggesting their validity (Ed Sandvik, Diener, and Larry Seidlitz 1993). Reliability studies have found that reported subjective well-being is moderately stable and sensitive to changing life circumstances (e.g. Joop Ehrhardt, Willem Saris, and Veenhoven 2000; and Bruce Headey and Alexander Wearing 1991). Consistency tests reveal that happy people are more often smiling during social interactions (José-Miguel Fernández-Dols and María-Angeles Ruiz-

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assessed with measures of satisfaction. It has been shown that pleasant affect, unpleasant affect and life satisfaction are separable constructs (Lucas, Diener, and Suh 1996).

<sup>7</sup> A survey about various measures of subjective well-being is provided by Frank Andrews and John Robinson (1991).



Belda 1995), are less likely to commit suicide<sup>9</sup> (Honkanen Koivumaa et al. 2001) and that changes in brain electrical activity and heart rate account for substantial variance in reported negative affect (Richard Davidson, John Marshall, Andrew Tomarken, and Jeffrey Henriques 2000). Thus, Diener (1984) in an early survey concluded that “[the] measures seem to contain substantial amounts of valid variance” (p. 551).

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  $W_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$  that is estimated by ordered probit or logit. Thereby, true well-being serves as the latent variable.  $X = x_1, x_2, \dots, x_n$  are known variables like sociodemographic and socioeconomic characteristics, as well as institutional constraints on individual  $i$  at time  $t$ . The model allows us to analyze 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. Advanced methods have been used recently in order to address nonrandom measurement errors.

Measurement errors, as well as unobserved characteristics, are captured in the error term  $\varepsilon$ . They are the source of potential biases as discussed in the following sections on unobserved personality traits and correlated measurement errors. However, many mistakes in people’s answers are random and thus do not bias the estimation results. This holds true for the order of questions, the wording of questions, actual mood, etc.

Nonsampling errors are, however, not always uncorrelated with the variables of interest. A measurement error perspective (e.g. Marianne Bertrand and Sendhil Mullainathan 2001, Martin Ravallion and Michael Lokshin 2001) suggests that the inferences can be clouded by unobserved personality traits that influence individuals’ sociodemographic and socioeconomic characteristics, as well as how they respond to subjective well-being questions. For instance, people doing voluntary work report higher life satisfaction (e.g. Argyle 1999). But volunteering does not necessarily make people happier. If extraverted people volunteer more often, and it is taken into consideration that extraverts tend to report higher satisfaction scores (e.g. Kristina DeNeve and Harris Cooper 1998), then the observed

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<sup>8</sup> Comprehensive discussions of measurement problems are, for example, provided in Andrews and Robinson (1991), Michalos (1991), Randy Larsen and Barbara Fredrickson (1999), Schwarz and Strack (1999) and Veenhoven (1993).

<sup>9</sup> Suicide is sometimes considered a more valid measure of happiness because it refers to revealed behavior. However, suicide only captures the tail-end of the distribution of mental well-being. While this is less of a problem in studying the determinants of low human well-being, it inhibits meaningful statements about average well-being and thus welfare comparisons.

correlation is biased. However, idiosyncratic effects that are time-invariant can be controlled for if the same individuals are re-surveyed over time. In a longitudinal or panel analysis, it is possible to consider a specific baseline well-being for each individual. The statistical relationship between socioeconomic status and reported subjective well-being is then identified by people who change their socioeconomic status.<sup>10</sup>

For some questions, a further reason for biases in microeconomic happiness functions may be relevant: the correlation of measurement errors with individual characteristics. For example, young people often report lower life satisfaction scores than old people. On the one hand, this could mean that young people in fact experience lower well-being. On the other hand, it is possible that age has an influence on *how* people react and respond to questions about their subjective well-being. An observed statistical relationship could then reflect only a spurious correlation. This kind of bias can hardly be overcome by econometric techniques.<sup>11</sup> However, it can be mitigated by carefully developed psychological tests and generation of the data.

In addition to the statistical preconditions to study the determinants of happiness discussed so far, further conditions have to be met if welfare comparisons are undertaken on the basis of reported subjective well-being. These conditions are cardinality and interpersonal comparability of the individual statements of well-being. Economists are likely to be skeptical about both claims.<sup>12</sup> Evidence has, however, been accumulated that both of them may be less of a problem on a practical level than on a theoretical level (e.g. Kahneman 1999).<sup>13</sup> Happy people are, for example, rated as happy by friends and family members (e.g. Heidi Lepper 1998 and Sandvik, Diener, and Seidlitz 1993), as well as by spouses (Paul Costa and Robert McCrae 1988). Ordinal and cardinal treatments of satisfaction scores generate quantitatively very similar results in microeconomic happiness functions (Frey and Stutzer 2000). This is

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<sup>10</sup> In addition to an unbiased estimation of partial correlations, the question of causality arises. In the example mentioned above, it is, for example, concluded that volunteering makes people happy. However, there is evidence that happier people are more willing to contribute to other people's well-being (e.g. Myers 1993). Therefore, the observed partial correlation could also mean that happier people do more voluntary work. The direction of causality cannot easily be identified even in a panel data analysis. Additional information from qualitative studies, or in the form of instrumental variables, is necessary.

<sup>11</sup> Correlated measurement errors are usually no problem for the inclusion of aggregate variables like inflation or democratic rights in microeconomic happiness functions.

<sup>12</sup> But it should be noted that this skepticism coexists with well established propositions in the literature on income inequality and poverty, taxation, and risk that accept implicit cardinal utility measurement and interpersonal comparability.

<sup>13</sup> Ng (1996) develops a method that yields happiness measures that are comparable interpersonally, intertemporally and internationally based on the concept of just perceivable increments.

consistent with validation results of the income evaluation approach, which focuses on the translation of verbal evaluations into numerical figures in a context-free setting (Bernard van Praag 1991). It is shown that the meaning of a sequence of verbal labels is about the same for all the people in the sample and that the verbal scale is efficiently used as the underlying intervals are of about equal length. The existing state of research suggests that, for many purposes, happiness or reported subjective well-being is a satisfactory empirical approximation to individual utility. It is thus possible and worthwhile to study economic and institutional effects on happiness.

### *3 Effects of Income on Happiness*

In the following, three aspects of the relationship between income and happiness are discussed:

- Are persons with high income at a given point in time happier than those with low income (section 3.1)?
- Does an increase in income over time raise happiness (section 3.2)?
- Are persons in rich countries happier than those in poor countries (section 3.3)?

#### *3.1 Happiness and Difference in Income between Persons*

Persons with higher income have more opportunities to achieve whatever they desire: in particular, they can buy more material goods and services. Moreover, they have a higher status in society. Higher income therefore yields higher utility, and conversely the poor are unhappy. This 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.<sup>14</sup> 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 (normally highly) significant. In this sense, “income does buy happiness”.

For the United States, figure 1 shows the strong positive relationship between (equivalent) real income and happiness in 1972-74 and in 1994-96 (using the General Social Survey data).

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<sup>14</sup> E.g. Blanchflower and Oswald (2000) and Easterlin (1995, 2001) for the United States, Di Tella, MacCulloch and Oswald (2001) for the member countries of the European Union, and Frey and Stutzer (2000) for Switzerland.

Average happiness is calculated based on the scores of “not too happy” being equal to 1, “pretty happy” equal to 2 and “very happy” equal to 3.

**[Figure 1 about here]**

Table 1 shows the corresponding data in more detail.

**[Table 1 about here]**

In both periods, the mean happiness rating (the higher it is, the happier people are) rises with income. In the lowest decile of income, the mean happiness scores are 1.92 (for 1972-74) and 1.94 (for 1994-96), for the fifth decile the score is 2.19, and for the tenth and highest decile it is 2.36. In the United States, people with higher income are happier.

Data for Europe from the Eurobarometer Survey Series (1975-1991) reveal a similar picture. For example, 88 percent of those persons located in the upper quartile of the income bracket rate themselves to be “fairly satisfied” or “very satisfied”, while 66 percent of those in the lowest income quartile do likewise (see the data presented in Di Tella, MacCulloch, and Oswald 1999).

However, additional income does not raise happiness ad infinitum and not for sure. As may be seen in figure 1, the relationship between income and happiness seems to be non-linear; there is diminishing marginal utility with absolute income. The data in table 1 also indicate that the same proportional increase in income yields a lower increase in happiness at higher income levels. Within the bottom five deciles, doubling income increases reported happiness, on average, by 0.05 score points in 1994-96; but only by 0.03 score points for the top five deciles. Evidence for diminishing marginal utility is also provided by three successive waves of the World Values Survey covering the years 1980-82, 1990-91 and 1995-97 and including between 18 and 30 countries (a total of 87,806 observations). It has been estimated that for a person moving from the fourth to the fifth decile in the distribution of family income, subjective well-being rises by 0.11 (on a ten point scale with 1.0 indicating the lowest, and 10.0 the highest level of satisfaction). In contrast, moving from the ninth to the tenth decile increases subjective well-being by only 0.02 (Helliwell 2001, p. 14).

Differences in income only explain a low proportion of the differences in happiness among persons. In the United States, for example, the simple correlation is 0.20 (Easterlin 2001, p. 468). Sometimes these findings are misleadingly interpreted that income is not relevant for individual happiness. However, the relevance of income is assessed with regard to the size of the coefficient in a multivariate analysis. A low correlation coefficient might indicate that other factors are also important in explaining why some people are happier than others.<sup>15</sup> In particular, other economic (in particular unemployment) and non-economic (in particular health but also personality) factors exert a strong influence that is beyond the indirect consequences on income. A relevant personality factor that might intervene is, for instance, that individuals who prize material goods more highly than other values in life tend to be substantially less happy (Joseph Sirgy 1997). Similarly, people whose goals are intrinsic, i.e. those who define their values by themselves, tend to be happier than those with extrinsic goals, i.e. those oriented towards some external reward, such as financial success or social approval (Tim Kasser and Ryan 2001).

Correlations do not establish causation. It may well be that it is not necessarily higher income which makes people happier, but rather that happier people earn higher income, e.g. because they like to work harder, and are more enterprising. In order to test the direction of causation, the effect of windfalls determining income have been analyzed. British lottery winners and people receiving an inheritance reported higher mental well-being in the following year. An unexpected transfer of £50,000 is estimated to raise subjective well-being by between 0.1 and 0.3 standard deviations (Jonathan Gardner and Oswald 2001; see also Stephen Smith and Peter Razzell 1975; and Philip Brickman, Dan Coates and Ronnie Janoff-Bulman 1978). This suggests that causation indeed runs from income to happiness.

There may be many different reasons why higher income does not simply translate into higher happiness. Without doubt, one of the most important ones is that individuals *compare* themselves to other individuals. It is not the absolute level of income that matters most but rather one's position relative to other individuals. This idea of *relative income* is part of the more general aspiration level theory. Concepts of interdependent preferences due to comparisons with relevant others (see e.g. Gary Becker 1974; Frank 1985; and Robert Pollak 1976) supplement ideas focussing on preference changes due to comparison with, for example, one's past consumption level or expected future income.

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<sup>15</sup> The low correlation may, of course, simply reflect substantial random disturbances.

In economics, Easterlin (1974, 1995, 2001) uses the concept of aspirations as a frame of reference to explain happiness. He acknowledges that people with higher income are, on average, happier, but raising everybody's income does not increase the everybody's happiness, because in comparison to others income has not improved. This interpretation of the data is supported by laboratory findings showing the importance of relative judgements for happiness (Richard Smith, Diener, and Douglas Wedell 1989 and Amos Tversky and Dale Griffin 1991).

Many economists in the past have noted that individuals compare themselves to significant others with respect to income, consumption, status or utility. 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. Aspirations thus tend to be above the level reached. 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.

A major line of research known as "individual welfare functions", or the Leyden approach, has been opened by van Praag and Arie Kapteyn (1973) and associates (for a recent survey, see van Praag and Paul Frijters 1999). A cardinal relationship between income and welfare is established by asking individuals to add income ranges to a number of qualitatively characterized income levels.<sup>16</sup> Answering this "income evaluation question", they should take into account their own situation with respect to family and job. The up to nine qualitative descriptions ranging from "excellent" to "very bad" are grouped along an interval scale from 0 and 1. The bounded scale reflects that the individual welfare function only measures relative welfare as perceived by the individual. Every individual evaluates her income by comparing it with the worst possible situation and the best possible situation of complete satiation. From this information, it is possible to estimate for each individual (i) the income that is required to reach a mean welfare level and (ii) the sensitivity of reported economic welfare to ex ante income changes.

Individual welfare functions have been estimated for several countries with good results, particularly for the Netherlands and Belgium (see e.g. van Floor Herwaarden, Kapteyn, and

van Praag 1977). A particularly interesting aspect is the connection established between the parameter of what people consider “sufficient” income and their actual income, which measures the “preference drift” due to a change in income. A positive correlation suggests that the ex post evaluation of a higher income is smaller than its ex ante evaluation. So what rich people consider a “sufficient” income, for example, is higher than what poor people consider a “sufficient” income. It is found that the preference shift “destroys” about 60-80 percent of the welfare effect of an increase in income, so that somewhat less than a third remains.<sup>17</sup> Individuals anticipate substantial gains in terms of satisfaction from higher income, but in retrospect are often disappointed about the small size of the effects of the gains.

Fred Hirsch (1976), in his book “Social Limits to Growth”, emphasizes the role of relative social status by calling attention to “positional goods” which, by definition, cannot be augmented because they solely rely on not being available to others. This theme was taken up by Frank (1985, 1999) who argues that the production of positional goods in the form of luxuries, such as exceedingly expensive watches or yachts, is a waste of productive resources, as overall happiness is thereby decreased rather than increased.

There is little doubt that people compare themselves to other people and do not use absolute judgements. But it is crucial to know with *what* other people such a comparison is being made. In a study of 5,000 British workers, Clark and Oswald (1996) formed the reference group comprising persons with the same labor market characteristics. They conclude that the higher the income of the reference group, the less satisfied people are with their job. Social comparisons within the family are studied by David Neumark and Andrew Postlewaite (1998) in order to test the role of relative income for utility. They find that the decision of a woman to go for paid work depends on whether her sisters and sisters-in-law are employed and how much they earn at their job.

The effect of the *distribution* of income on happiness has so far been rarely addressed, mainly due to the lack of suitable data. A fascinating finding by Alberto Alesina, Di Tella, and MacCulloch (2001) suggests that there is a large negative and statistically significant effect of inequality on happiness in Europe, but not in the United States. This may be explained by Europeans having an inequality aversion, while Americans do not. Alternatively, upward

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<sup>16</sup> For example, “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).

social mobility is perceived to be larger in the United States than in Europe, and therefore being low in the income distribution is not seen as affecting future income.

Most of the research on the relationship between individual income and happiness has been undertaken for advanced industrial countries. But it has been shown (Carol Graham and Stefano Pettinato 2001a,b) that the results essentially carry over to both developing countries and to countries in transition. All this evidence is consistent with a positive relationship between individual income and happiness within a society at a given point in time. However, it emphasizes the relevance of the relative position in the income distribution rather than the absolute level of income.

### 3.2 *Income and Happiness over Time*

Several scholars (e.g. Blanchflower and Oswald 2000; Diener and Oishi 2000; Myers 2000; Kenny 1999; Lane 1998; and Easterlin 1974, 1995) have identified a striking and curious relationship: per capita income in western countries like the United States, the United Kingdom and Belgium, but also in Japan, has risen sharply in recent decades, whereas average happiness has stayed “virtually constant” or has even declined over the same period. Graphically, the development of income and happiness diverges like open scissors. Consider figure 2 for Japan.

**[Figure 2 about here]**

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 having an indoor toilet, a washing machine, telephone and color television, as well as a car (see Easterlin 2000). 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.

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<sup>17</sup> If interdependent preferences are taken into consideration in addition to habit formation, the preference drift seems to outbalance 100 percent of the welfare effect of income gains (Huib van de Stadt, Kapteyn, and Sara van de Geer 1985).



The same relationship is revealed for the United States in table 1 above. Between 1972-74 and 1994-96, overall mean equivalent real income in the sample has increased from US \$ 17,434 to US \$ 20,767 (19 percent). But the overall mean happiness rating has even decreased slightly, from 2.21 to 2.17. Income in all deciles (except the third) has increased, yet mean happiness ratings have fallen, or stayed constant, in eight of the ten deciles.

What can be inferred from these two cases? One position that can be taken is to disregard the descriptive evidence (i) 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 and Oishi 2000) and (ii) 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 for (Blanchflower and Oswald 2000). For 12 European countries between 1975 and 1991 there is no correlation between real GDP per capita and life satisfaction, provided individual characteristics as well as the unemployment rate, inflation rate and income distribution are controlled for (Alesina, Di Tella, and MacCulloch (2001)).<sup>18</sup>

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 missing correlation is not due to a changing population. It has been shown for the United States that average happiness of a cohort also remains constant over the life cycle, despite considerable growth in income (Easterlin 2001).

The results can be taken as an indication that there is more to subjective well-being than just income level. 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 judgements. Rather, they are constantly drawing comparisons from the past or from their expectations of the future. Thus, we notice and react to deviations from *aspiration 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

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<sup>18</sup> A more fundamental objection could question whether it is in principle possible to capture trends on a closed scale. Valuable complementary evidence could be provided by measures of mental well-being like the General Health Questionnaire (David Goldberg 1972), where much less framing in terms of categories is to be expected.

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.

Adaptation level theory is well grounded in psychology (in particular Harry Helson 1964; Brickman and Donald Campbell 1971; Allen Parducci 1995; and, for a modern discussion, Shane Frederick and Loewenstein 1999), as is the concept of aspiration levels (Francis Irwin 1944). According to aspiration level theory, happiness is determined by the gap between aspiration and achievement (Michalos 1991 and Inglehart 1990, ch. 7). In economics, the theories of preference change have concentrated on habit formation (e.g. Alfred Marshall 1890; Duesenberry 1949; Franco Modigliani 1949; Robert Pollack 1970; and more recently Christopher Carroll and David Weil 1994).

There are three important consequences:

- (1) The upward adjustment of aspirations induces human beings to accomplish more and more. They are never satisfied. Once they have achieved something, they want to achieve even more. The theory of “rising aspirations” does not hold only for material goods and services but also for many immaterial achievements. A promotion, for example, makes for temporary happiness, but at the same time raises the expectation and aspiration for further promotions.
- (2) Wants are insatiable. The more one gets, the more one wants. The marginal utility of income is thus not defined anymore in this framework, as the utility function changes with the income level.
- (3) Most people think that they felt less happy in the past, but expect to be more happy in the future (Easterlin 2001). This asymmetry can be explained by changing aspirations, as will be illustrated below.

The effects of changes in income affecting aspiration levels are illustrated in figure 3 (see Easterlin 2001).

**[Figure 3 about here]**

Initially, people have a certain aspiration level  $A_1$  so that income  $Y_1$  produces happiness  $H_1$ . Raising income, say from  $Y_1$  to  $Y_2$ , raises happiness from  $H_1$  to  $H_2$ . If it rises further, say to  $Y_3$ , happiness is further increased to  $H_3$ . The points a, b and c trace a curve with decreasing

marginal utility of income, as normally assumed in economic theory. This curve holds for a particular point in time. It suggests that higher income indeed makes people happier.

But, over time, aspiration adjusts to the higher income level. The aspiration level curve  $A_1$  shifts downward to  $A_m$ . Ex post, the rise in income from  $Y_1$  to  $Y_2$  does not produce any increase in happiness if the aspiration curve indeed shifts as much downward as assumed in the graph. If the increase in income jacks up aspirations even higher, say to the aspiration curve  $A_h$ , income  $Y_2$  produces even less happiness than the lower income  $Y_1$ .

Aspiration level theory suggests that increases in income and aspiration levels are closely connected. The increase in happiness expected on the basis of a given aspiration curve – for example along the points a, b, and c on aspiration curve  $A_1$  – does not materialize. Rather, an increase in income is accompanied by a downward shift in the aspiration curve. In equilibrium, one may, for example, observe that the sequence of points a, e, and f materializes. As the curves are drawn, higher income matches higher happiness, but an increase in income produces a much smaller increase in happiness than with given aspiration levels.

As indicated above, the figure helps to explain the asymmetry in evaluations of happiness referring to the past and to the future. A person with income  $Y_3$  judges his or her past happiness on the basis of the *current* aspiration level  $A_m$ . As income has risen, say from  $Y_2$  to  $Y_3$ , the previous income is evaluated to have produced happiness  $H_1$  at point d, which is lower than today's happiness level  $H_4$ , as given at point e. Current happiness is thus taken to be higher than in the past. In actual fact, when the individuals *actually* received income  $Y_2$ , they had a lower aspiration level and therefore that income actually produced happiness  $H_2$  in the past, which in our figure is even higher than today's happiness  $H_4$ .

Future income is also evaluated on the basis of the *current* aspiration level. Let's take the case of a person situated at point e with income  $Y_3$  and happiness  $H_4$ . He or she anticipates that an increase in income from  $Y_3$  to  $Y_4$  produces a well-being along curve  $A_m$ , so that happiness  $H_3$  at point f is to be expected. But the person does not take into account that the aspiration level also rises and that the aspiration curve will therefore shift downwards, say to curve  $A_h$ . In actual fact, therefore, when the higher income  $Y_4$  is indeed reached, the level of happiness is only  $H_4$  at point h, and not  $H_3$  as would have been the case if the aspiration level had stayed constant at point f. The actual happiness of the increase in income is thus systematically lower than expected beforehand (in our figure 3, happiness even stays constant).

### 3.3 *Income and Happiness between Different Countries*

Various studies provide evidence that, on average, persons living in rich countries are happier than those living in poor countries (for example Diener, Marissa Diener and Carol Diener 1995 and Inglehart 1990). The differences in income between the countries are measured by using exchange rates, as well as purchasing power parities, in order to control for the international differences in the cost of living. Data on happiness are usually from the World Values Survey, the best source available today for international comparisons of life satisfaction (Inglehart et al. 2000).

Figure 4 illustrates the relationship between income per capita and average life satisfaction in 51 countries for data from the two waves of the World Values Survey in the 1990s.

**[Figure 4 about here]**

The figure shows that reported subjective well-being seems to rise with income. Some of the authors identify a concave relationship: income provides happiness at low levels of development but, once a threshold (around \$ 10,000) is reached, the average income level in a country has little effect on average subjective well-being.

A visual inspection of the relationship between income and happiness across countries is, however, of limited value. The positive correlation may be produced by factors other than income alone. In particular, countries with higher per capita incomes tend to have more stable democracies than poor countries. So it may well be that the seemingly observed positive association between income and happiness is in reality due to more developed democratic conditions (see section 6).

In addition to democracy, there may be other conditions correlated with income, which may produce the observed positive correlation between income and happiness. To mention two more: the higher the income is, the better the average health and the more secure the basic human rights. Thus, both health and basic human rights may seemingly make happiness rise with income.

Moreover, the positive correlation may come as a surprise in the light of evidence presented for happiness over time, where no robust relationship between income per capita and happiness is found. There are two possible strategies to further address the role of absolute income in happiness in and between countries. First, cross-sectional data for several periods

can be combined in order to allow a control of time-invariant country specific characteristics. These characteristics could comprise stable cultural differences, systematic distortions due to language differences and so on. Such an approach is followed in a study mentioned before combining data for 49 countries from the first three waves of the World Values Survey. Instead of country specific effects, separate base levels for six groups of countries are taken into consideration in the estimation equation: industrial countries, Scandinavia, countries of the former Soviet Union, other countries of Eastern Europe, Latin American countries, and other developing countries.<sup>19</sup> It is found that national income per capita (measured in percentage of the value for 1997 in the United States) has a very small effect on reported subjective well-being. A 10 percent increase in per capita incomes in a country with half the level of the United States (and unchanged income distribution) raises average satisfaction with life by only 0.0003 score points on a scale from one to ten, and the gain disappears even before the US 1997 level of real per capita income is achieved (Helliwell 2001, p. 15).

This evidence is more in line with the findings for income and happiness over time than with previous results from cross-section studies that neglected country or region specific determinants of reported subjective well-being. However, it may be argued that poor countries are not adequately represented in the data pool. As the relationship between income and happiness seems relevant, especially from a development perspective, a second strategy could directly address subjective well-being in developing countries. However, extended time series about reported subjective well-being in developing countries with strong economic growth are lacking so far. Promising projects are a socio-economic panel in Russia (Ravallion and Lokshin 2001) and repeated surveys in 17 Latin American countries (Graham and Pettinato 2001b). First evidence for Peru and Russia indicates that economic development is accompanied by extensive social mobility and, for some people with fast increasing aspiration levels, that may depress overall well-being gains from increased economic wealth. While perceived past mobility and prospects of upward mobility have a positive effect on reported subjective well-being, there is a fraction of “frustrated achievers” that, in spite of objective mobility, reports negative perceived mobility and low satisfaction with life (Graham and Pettinato 2001a).

Another aspect to consider is whether, when income and happiness between countries are compared, causality runs from income to well-being, as implicitly assumed so far. An inverse causation can well be imagined (see for example Kenny 1999). It might, for instance, be

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<sup>19</sup> The strategy of constructing groups of countries is chosen in order to leave more degrees of freedom in the

argued that the more satisfied the population is with its life, the more it is inclined to work hard, and therefore the higher is its per capita income. Or, in other words, happy people may be more creative and enterprising, leading again to higher income. So far, this line of argument has not been well understood but should be seriously considered in the future.

The available evidence suggests that across nations income and happiness are correlated but that the effects are small and diminishing. This indicates that on the one hand other factors may be more important to explain differences in reported subjective well-being between countries, and on the other hand that the notion that people in poor countries are happier because they live under more “natural” and less stressful conditions is a myth.

#### ***4 Effects of Unemployment on Happiness***

Two questions and their ramifications will be discussed:

- What is the level of happiness of an unemployed person (section 4.1)?
- How does general unemployment in an economy affect happiness (section 4.2)?

##### *4.1 Personal Unemployment*

Reports on subjective well-being help to identify the level of utility of unemployed people. How particular people are affected when they become unemployed has been studied with individual data for twelve European countries over the period 1975-1991, employing Eurobarometer data on satisfaction with life on a four point scale (Di Tella, MacCulloch, and Oswald 2001). The analysis, which controls for a large number of other determinants of happiness, such as income and education, finds that the self-proclaimed happiness of those persons being unemployed is *much* lower than employed persons with otherwise similar characteristics. The loss of subjective well-being experienced by unemployment amounts to 0.33 units in the satisfaction scale, ranging from 1 (“not at all satisfied”) to 4 (“very satisfied”).

Many other studies have also found that, for many different countries and time periods, personally experiencing unemployment makes people very unhappy.<sup>20</sup> In their path-breaking study for Britain, Clark and Oswald (1994, p. 655) summarize their result as “joblessness

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statistical analysis.

depressed well-being more than any other single characteristic, including important negative ones such as divorce and separation.” Some analyses offer additional results for particular groups of unemployed people. While the picture is not totally consistent, many studies find that unemployment on average weighs more heavily on men than on women. Younger and older employees suffer less when hit by unemployment than employees in the middle of their working life. For Germany, it has, for example, been found that unemployment does not reduce satisfaction with life of women over 50 (Knut Gerlach and Gesine Stephan 1996). People with high education experience a larger decrease in their subjective well-being due to unemployment than employees with low education (Clark and Oswald 1994).

All these results refer to the “pure” effect of being unemployed. The income loss, as well as other indirect effects, which may, but need not, go with personally being unemployed, are controlled for.

It could be argued that what has been found could be interpreted quite differently. While the negative correlation between unemployment and happiness is well established, it may well be that the causation runs in the opposite direction implied so far: unhappy people do not perform well, and therefore get laid off. Happy persons are fitter for working life, which makes it less likely that they will lose their job. The question of reverse causation due to a selection bias has been analyzed in many studies with longitudinal data, before and after particular workers lose their jobs, for example due to a plant closure. There is evidence that unhappy people are indeed not performing well on the labor market, but the main causation seems clearly to run from unemployment to unhappiness (see e.g. Winkelmann and Winkelmann 1998 for German panel data, or Gary Marks and Nicole Fleming 1999 for Australian panel data, the latter considering in detail various effects on mental health).<sup>21</sup>

As the lower subjective well-being of unemployed people can neither be explained by the lower income level nor the self selection of intrinsically less happy people, unemployment has to be related to non-pecuniary costs. The drop in happiness may, to a large extent, be attributed to psychological and social factors (see, e.g., the survey by Norman Feather 1990):

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<sup>20</sup> E.g., Anders Björklund and Tor Eriksson (1998) for Scandinavian countries, Blanchflower and Oswald (2000) for the United Kingdom and the United States, Thomas Korpi (1997) for Sweden, Ravallion and Lokshin (2001) for Russia, and William Darity and Arthur Goldsmith (1996) for a survey.

<sup>21</sup> Studies in social psychology also identify effects of unemployment and re-employment on mental well-being. Studies that explicitly control for individual heterogeneity with a longitudinal design are, e.g., Mary Dew, Evelyn Bromet and Lili Penkower (1992) and Brian Graetz (1993). For a recent survey, see Gregory Murphy and James Athanasou (1999).

- *Psychic Cost.* Unemployment produces depression and anxiety, and results in a loss of self-esteem and personal control. Especially for persons very involved in their work, not having a job is a heavy blow. It has been established in numerous studies (see Goldsmith, Jonathan Veum, and Darity 1996) that the unemployed are in worse mental (and physical) health than people in work. As a result, they are subject to a higher death rate, more often commit suicide<sup>22</sup> and are more prone to consuming large quantities of alcohol. Their personal relationships are also more strained.

The psychic cost is considerably higher for those being made redundant for the first time. In contrast, persons who have been unemployed more often in the past suffer less, that is to some extent they get used to being unemployed. This finding may to some extent explain persistent unemployment (Clark, Yannis Georgellis and Peter Sanfey 2001).

- *Social Cost.* Being unemployed has a stigma attached to it, particularly in a world in which one's work essentially defines one's position in life. This aspect will be further discussed in the following section.

#### 4.2 *General Unemployment*

People may be unhappy about unemployment even if they are not themselves put out of work. They may feel bad about the unfortunate fate of those unemployed and they may worry about the possibility of becoming unemployed themselves in the future. They may also feel repercussions on the economy and society as a whole. They may dislike the increase in unemployment contributions and taxes likely to happen in the future, they may fear that crime and social tension increase, and they may even see the threat of violent protests and uprisings.

The study of 12 European countries over the period 1975-1991 mentioned above (Di Tella, MacChulloch and Oswald 2001) finds that – keeping all other influences constant – a one percentage point increase in the general rate of unemployment from 9 percent (the European mean) to 10 percent reduces stated life satisfaction by 0.028 units on the four-point scale applied. This effect is of considerable size. This small rise in unemployment is equivalent to shifting more than 2 percent of the population downwards from one life-satisfaction category to another, for example from “not very satisfied” to “not at all satisfied”.

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<sup>22</sup> In a recent study using longitudinal data for the United States for 1972-91, it is found that state unemployment rates are significantly positively related to the number of suicides. A one percentage point increase in state unemployment rates predicts an increase of suicides by 1.3 percent (Christopher Ruhm 2000).



The overall effect of unemployment on social well-being can be calculated by adding the loss experienced by those persons being unemployed to the overall effect of unemployment. Consider again a 1 percentage point increase in unemployment. In the previous section it was shown that the unemployed experience a fall of 0.33 in their happiness scale. This figure must be multiplied by the one percent of the population who have been unfortunate enough to actually become unemployed:  $0.33 \times 0.01 = 0.0033$ . Added to the general effect of a one percentage point unemployment increase of 0.028, it leads to a total decrease of 0.0313 (Di Tella, MacCulloch, and Oswald 2001).

This calculation must be taken with a grain of salt. It is at best able to gauge the effects of unemployment on happiness in an approximate way. One reason for having to be cautious is that there may be various interactions between personal and more general unemployment, which may in turn affect the evaluation of happiness.

An important interaction refers to reference groups. As is the case for income, individuals tend to evaluate their own situation relative to other persons. For most persons, unemployment lowers their happiness less if they are not alone with their particular fate. When unemployment is seen to hit many persons one knows or hears of, both the psychic and the social effects are mitigated. Self esteem is better preserved because it becomes obvious that being out of a job is less one's own fault and more due to general developments in the economy. Stigma and social disapproval are less prevalent if unemployment hits many other persons at the same time.

In order to empirically test the effect of reference groups on reported well-being, happiness scores have been regressed on three types of explanatory variables:

- personal unemployment,
- unemployment among a reference group, and
- an interaction variable combining personal and reference group unemployment,

Using as a reference group the employment state of one's partner or, alternatively, the region an individual lives in, such a happiness function has been estimated for British data over the period 1991-96, again keeping all other influences constant (Clark 2000). As in virtually all previous studies, the unemployed are much more dissatisfied than people with a job, and the general level of unemployment lowers happiness. In contrast, the unemployed indeed suffer less when the partner and/or a larger proportion of other people living in their region are also

out of work. The same result is reached when general unemployment in the economy is taken as the point of reference (Peter Kelvin and Joanna Jarrett 1985).

Unemployed people's well-being, moreover, depends on the strength of the social norm to work. Social interaction of unemployed people with other community members, the reference group forced upon themselves, has the effect of showing them how they are expected to behave, and norm-conforming behavior is enforced through social sanctions. In an estimation across Swiss communities, it has been shown that the stronger the social norm to live off one's own income, the lower is unemployed people's reported satisfaction with life (Stutzer and Rafael Lalive 2000).

Reference groups are of major importance for showing the extent to which people are distressed by their own unemployment. However, what group one refers to is not given, but can to some extent be chosen (e.g. Armin Falk and Markus Knell 2000). People out of work tend to associate with other people out of work, partly because they have time to do so, or partly because they retreat from normal community life. It is also known that marriages and partnerships have a high risk of breaking down when one of the partners is unemployed. In all these cases, the definition of the reference group adjusts to one's labor market status. Causation then does not run unambiguously from the reference group to the evaluation of unemployment in terms of happiness.

## ***5 Effects of Inflation on Happiness***

In combined time series and cross section studies, the development of inflation in several countries over the course of time can be analyzed. Of most interest is the study of 12 European countries over the period 1975-91 (Di Tella, MacCulloch, and Oswald 2001). The mean rate of inflation was 7.5 percent per year. Based on an econometric estimate, which keeps individual socio-economic characteristics, as well as the unemployment rate constant, an increase in the inflation rate by one percentage point – say from the mean rate of 8 to 9 percent per year - is calculated to reduce average happiness by 0.01 units of satisfaction, i.e. from an average level in the sample of 3.02 to 3.01. (Average satisfaction is calculated from a cardinal interpretation of the 4-point scale that attributes “not at all satisfied” a value of 1, “not very satisfied” a value of 2 etc.) Correspondingly, an increase in the inflation rate by 5 percentage points (which historically is quite a likely event) reduces subjective well-being by 0.05 units. This is a substantial effect. It means that 5 percent of the population are shifted

downwards from one life satisfaction category to the next lower one, e.g. from being “very satisfied” to “fairly satisfied”.

In order to study the *trade-off* between inflation and unemployment, the results reported on the effect of unemployment on happiness, and the results concerning inflation just discussed, can now be combined (Di Tella, MacCulloch, and Oswald 2001). The question is by how much, on average, must a country reduce its inflation in order to tolerate a rise of one percentage point in unemployment? Over the relevant range, happiness is assumed to depend linearly on the two economic factors, and the estimate controls for country fixed-effects, year effects and country-specific time trends. It is calculated that a one percentage point increase in the unemployment rate is compensated for by a 1.7 percentage point decrease in the inflation rate. Thus, if unemployment rises by five percentage points (say from 3 to 8 percent), the inflation rate must decrease by 8.5 percentage points (say from 10 to 1.5 percent per year) to keep the population equally satisfied. The so-called “Misery Index”, which simply adds the unemployment rate to the inflation rate, distorts the picture by attributing too little weight to the effect of unemployment, relative to inflation, on self-reported happiness.

## ***6 Institutional Effects on Happiness***

### *6.1 Basic Constitutional Rules*

People’s happiness is influenced by the kind of political system they live in. It is to be expected that people living in constitutional democracies are happier because the politicians are more motivated to rule according to their interests. If they disregard the wishes of the population, the politicians and parties in a democracy fail to be reelected and lose their power. Democratic institutions, in particular the right to participate in elections and vote on issues, thus contribute to citizens’ happiness.

Researchers on happiness have looked at the interaction between democracy and happiness. The extent to which a constitution is democratic and allows its citizens to take decisions according to their own preferences can be captured by various indices of freedom.

Figure 5 presents a graphical representation of a comprehensive measure of freedom, combined with a 4-point measure of happiness, in 38 mainly developed nations at the beginning of the 1990s (Veenhoven 2000). A visual test reveals that freedom and happiness are positively related.

**[Figure 5 about here]**

The comprehensive index of the constitutional set-up used in this figure refers to the following three areas:

- *Political freedom* measures the possibility of citizens to engage in the democratic process or, conversely, the restrictions on political participation. It is composed of two sub-indices, the first relating to civil rights, such as freedom of speech (with 11 items), and the second to political rights (9 items).
- *Economic freedom* measures the opportunity for individuals to engage in the free exchange of goods, services and labor. It is based on sub-indices (each in turn composed of a number of items), referring to the security of money, free enterprise, freedom from excessive taxation and the possibility of undertaking monetary transfers.
- *Personal freedom* measures how free one is in one's private life, for example, to practice one's religion, to travel or to get married.

To combine the sub-indices, average z-scores are calculated. All three - political, economic and personal freedom - are strongly and statistically significantly correlated with happiness (Veenhoven 2000). Controlling for differences in per capita income, the correlation with economic, but not political and personal, freedom remains statistically significant. Analyses with sub-samples suggest that economic freedom contributes to happiness particularly in poor countries with a low level of general education, while political freedom is more strongly correlated with subjective well-being in rich countries with a high level of education. In both cases, differences in income per capita are controlled for (Veenhoven 2000).

Such studies are certainly illuminating, but they can only inform us in a limited way about the influence of various constitutional conditions on subjective well-being. Countries differ from each other in many ways, and it is not sufficient just to control for unequal per capita incomes to capture the influence of democracy. Moreover, the cross-section studies only report correlations and do not deal with causation. Even if we ignore the other problems, it remains open whether democracy fosters happiness, or whether happiness is a precondition for democracy. It has been argued, for instance, that high satisfaction with life in a population increases the legitimacy of the political regime in power and it may thus foster democracy (Inglehart 1990, 1999). For Latin America and Russia, one study (Graham and Pettinato

2001b) indeed identified a mutual dependence of pro-democracy and pro-market attitudes with well-being: both raise happiness, but happier people are also more likely to have pro-democratic and pro-market attitudes. With due caution, it may be hypothesized that, for the respective respondents, there is a virtuous circle in which attitudes favorable to democracy, to the market, and to life satisfaction, reinforce each other.

In the following, we concentrate on *specific* institutions of democracy in *one particular country*. This removes many problems, which may arise due to the difficulties of internationally comparing happiness scores and their determinants across countries.

## 6.2 Referenda

The possibility of citizens to directly participate in politics is an important feature of democracy. The constitutions of many countries allow popular referenda, but they are sometimes only used as a device to inform the government when it no longer knows what to do. Often it is used as a plebiscite in which the voters are asked to support the government's policy. In many cases, it is restricted to local and sometimes trivial issues, while the decisions on important issues are reserved for the professional political actors in parliament and government. In the United States, there are many popular referenda at the local level as well as in some states (especially in California), but the constitution does not allow them at the national level. The only country with an extensive set of direct political participation rights at *all* levels of government, and with respect to *all* issues, is Switzerland. Of the 728 referenda made all over the world at the *national* level between 1900 and 1993, 357 (or almost 50 percent) were held in Switzerland (see David Butler and Austin Ranney 1994).

A referendum, in which all the citizens have the possibility to participate, meets the crucial requirement that it gives decision-making power to people *outside* of the group of (professional) politicians. The constitutional setting determines to a large extent what issues are put on the political *agenda*, and what issues are prevented from appearing. In representative democracies, politicians are often very skilled at not letting those problems, which are to their disadvantage, be discussed in the democratically legitimized institutions. For example, they usually succeed in not having their privileges (e.g. their income and pensions) discussed in open parliamentary sessions. In direct democracies, however, in which the citizens may put any issue to the ballot, the agenda is much less under the control of the *classe politique*.

The effect of direct democracy on various aspects of society has been carefully analyzed in a number of econometric studies for the United States:

- Government expenditure and government revenues are lower in institutions with direct democracy (John Matsusaka 1995);
- Per capita debt is substantially lower with a referendum requiring a qualified majority (William McEachern 1978);
- Land prices are higher because people find it attractive to live and work in such communes (Rexford Santerre 1986);
- Public expenditures for education are higher when a referendum is possible (Santerre 1989).

The following insights have been gained on the basis of econometric studies for Switzerland:

- A comparison of Swiss communes with different degrees of institutionalized forms of participation in political decisions reveals that the outcomes correspond more closely to the voters' preferences, the more directly democratic they are (Werner Pommerehne 1990);
- The growth of public expenditure is more strongly determined by demand factors (i.e. by the citizens' willingness to pay) than by supply factors (in particular by the politicians' and bureaucrats' own interests) (Pommerehne and Friedrich Schneider 1978);
- Public supply is less costly, the more direct the democratic institutions are (Pommerehne 1978);
- Tax morale is higher than in representative democracies (Pommerehne and Hannelore Weck-Hannemann 1996; Frey 1997);
- Per capita incomes in cantons with more strongly developed direct participation possibilities of the citizens are significantly higher than in cantons with less developed forms of direct participation (Lars Feld and Marcel Savioz 1997).

All these results control for a great number of variables unrelated to direct democracy. They provide strong evidence that the deviations from the citizens' preferences are indeed significantly lower in a referendum compared to a representative democracy.

The influence of direct democracy on happiness has been analyzed using data on reported subjective well-being for Switzerland in 1992-1994 (Frey and Stutzer 2000). The major explanatory variable is the institutionalized right of individual political participation via

popular referenda, which varies considerably between the 26 Swiss cantons. The estimates reveal that the extent of direct democratic participation possibilities exerts a statistically significant, robust and sizeable effect on happiness *over and above* the demographic and economic determinants normally taken into account. When the full variation in the institutional variable is considered, i.e. when individuals in the canton with the highest democracy index (Basel Land) are compared to citizens in the canton with the lowest direct participation rights (Geneva), the former state with an 11 percentage points higher probability that they are completely satisfied. This effect is larger than living in the top rather than in the bottom income category.

### 6.3 *Federalism*

The decentralization of decision making is an alternative means for better fulfillment of the voters' preferences: individuals tend to leave dissatisfying jurisdictions while they are attracted to those caring for the population's preferences at low cost. The possibility to vote with one's feet (Charles Tiebout 1956; see also James Buchanan 1965; and Albert Hirschman 1970) tends to undermine regional cartels by politicians. The division of competence between communities and the cantonal government, or the extent of fiscal decentralization, is thus another constitutional factor systematically influencing happiness. In the study for Switzerland mentioned above (Frey and Stutzer 2000), the extent of local autonomy is measured by an index based on survey results. Chief local administrators in 1,856 Swiss municipalities were asked to report how they perceive their local autonomy on a 10 point scale.

The estimate reveals a statistically significant positive effect of decentralization on subjective well-being. For local autonomy, the proportion of persons who indicate being completely satisfied with life increases by 3.3 percentage points, compared to a situation in which the communes are one index point less autonomous vis-à-vis their canton.

## **7 *Summary and Implications***

### 7.1 *What Economists Can Learn*

The insights gained from research on happiness throw new light on important issues analyzed in economics. Most important, they enlarge the scope of empirical measurement and provide new tests for theories.

Happiness is not identical to the traditional concept of utility in economics. However, it is closely related. On the one hand, the concept of subjective happiness is a valuable complementary approach, which, however, covers many more aspects of human well-being than the standard concept of utility. On the other hand, subjective well-being can be considered a useful approximation to utility which economists have avoided to measure explicitly. This allows us to empirically study problems which so far could only be analyzed on an abstract theoretical level. Moreover, the analysis of data on subjective well-being may allow for discrimination between competing explanations for empirical findings in behavior (for an application, see Stutzer and Lalive 2000). The opportunities offered by information on well-being and affect may not only enrich field research, but also laboratory research in experimental economics (see e.g. Gary Charness and Brit Grosskopf 2001 and James Konow and Joseph Earley 1999). These extensions represent a considerable step forward towards a social science able to provide useful information.

## 7.2 *Implications for Economic Policy*

The insights gained about happiness are in many respects useful for economic policy undertaken by governments. Some examples suffice to illustrate the point:

- The use of measures of happiness allows for a new way of evaluating the *effects of government expenditure*. All too often, the effect is measured by the cost incurred by the state: the more spent, the better. This is obviously not always the case, and in some instances lower expenditure would be better. The problem has been approached scientifically by using benefit-cost analysis. The benefits are the recipients' marginal willingness to pay, which is best measured in surveys by a Contingent Valuation analysis. This method can be complemented by simulations using micro-econometric happiness functions with a large number of determinants that allow for the evaluation of the widespread effects of extensive expenditure policies.
- *Welfare policy* is faced with the question of how much economic destitution is responsible for persons feeling unhappy. To what extent can persons with low income be helped by financial support? If low income is due to unemployment, the research results suggest that providing the person with a higher income can only compensate for the pecuniary effect. In order to improve people's well-being, the policy should rather be directed towards providing the person with appropriate employment.



- An important part of *anti-poverty policy* deals with the question of what “poverty” is. Traditionally, the definition relies on disposable income. Happiness research allows the problem to be approached more fundamentally by considering reported levels of subjective well-being. Such complementary measurement also allows equivalence scales to be established (Erik Plug and van Praag 1995). They indicate the increase in income necessary to compensate for a larger family, while maintaining the subjective well-being of the family.
- *Tax policy* must consider to what extent various income groups are affected. Is it possible to achieve social goals by redistributing income, or are the negative effects on subjective well-being prohibitive? Recently, it has been argued that the fight for *relative* positions is socially wasteful, and that the high income recipients, as winners of these status races, should be more heavily taxed (Frank 1999; more generally Layard 1980). This proposal has been influenced by the findings of happiness research, which suggest that people derive more satisfaction from their position in comparison to other income recipients than from the income level as such. If the redistributive tax policy is able to make this race less attractive, subjective well-being may be positively affected. But, for an overall evaluation, this proposal must consider many additional aspects, in particular what possibilities the high income recipients have to evade increased taxes.

Happiness functions have sometimes been looked at as the best existing approximation to a *social welfare function* to be maximized (explicitly e.g. Di Tella, MacCulloch, and Oswald 2001, p. 340). The optimal values of the determinants thus derived are – according to this view – the goals which economic policy should achieve. It seems that, at long last, the so far empirically empty social welfare maximization of the quantitative theory of economic policy (Jan Tinbergen 1956 and Henry Theil 1964) is given a new lease of life.

Such an endeavor is still confronted with fundamental problems of social welfare maximization (Frey 1983, pp. 182-194). While the shortcoming of empirical emptiness has been overcome (provided one is prepared to accept happiness functions as a reasonable approximation to a social welfare function), the government still has little or no incentive to pursue such a policy. Only a „benevolent dictator“ government would do so (Geoffrey Brennan and Buchanan 1985). Empirical analyses in Public Choice (see for example Dennis Mueller 1997) suggest that governments are not benevolent and do not simply follow the wishes of the population, even in well-functioning democracies, not to mention authoritarian and dictatorial governments. Hence, to maximize the happiness function neglects the crucial

incentive aspect. Therefore, the insights from empirical analyses should serve mainly as information on favorable economic and institutional conditions. If they are considered to be convincing by political entrepreneurs and citizens, they are taken up and are proposed in the political process.

### 7.3 *Implications for Economic Theory*

Happiness research adds considerable new insights to well-known theoretical propositions. This has been shown with the example of how income, unemployment and inflation affect reported individual well-being.

*Effects of income.* Most economists take it as a matter of course that higher income leads to higher happiness. A higher income expands individuals' and countries' opportunity set, i.e. more goods and services can be consumed. The few people not interested in more commodities need not consume them; they are free to costlessly dispose of any unwanted surplus. It therefore seems obvious that income and happiness go together (provided, of course, that the two are correctly measured).

But there are also some economists who do not subscribe to the idea that higher income produces higher happiness. One of them is John Kenneth Galbraith who, in his famous book on the *Affluent Society* (1958), pointed out the limited use of higher private income while the public sector is starving. The first economist to seriously study the data on happiness, Easterlin (1974), concluded that "money does not buy happiness". Another author claiming that the most cherished values cannot be bought on markets is Tibor Scitovsky with his *Joyless Economy, The Psychology of Human Satisfaction* (1976). Scitovsky even argues that a high level of wealth brings continuous comforts and thereby prevents the pleasure that results from incomplete and intermittent satisfaction of desires. More recently, Frank, in his *Luxury Fever* (1999), emphasizes that ever increasing income and consumption do not bring higher happiness.

The empirical research on happiness has clearly established that at a given point in time, and within a particular country, persons with higher income are happier. Over time, however, happiness in western countries and Japan does not systematically increase, despite considerable growth in real per capita income. This can be attributed to the rise in aspiration levels going with increases in income. Between countries, and at per capita income levels much below the United States, higher average income goes with higher average happiness, but the improvements in reported subjective well-being seem to be rather small.

*Effects of unemployment.* There are two quite different views about unemployment in economics. According to the “new classical macroeconomics”, unemployment is voluntary. People choose to go out of employment because they find the burden of work and the wage paid unattractive compared to being unemployed and getting unemployment benefits. Other economists take unemployment to be an unfortunate event to be avoided as much as possible. For them, to become unemployed is considered to be burdensome and, above all, involuntary. For those affected, becoming unemployed is considered to be a most unfortunate event. Happiness research suggests that unemployment strongly reduces subjective self-reported well-being, both personally and for society as a whole. This is more in line with the view that unemployment is involuntary for the bulk of people affected.

*Effects of inflation.* The costs of an increase in the general price level – inflation – are discussed in theoretical economics on the a priori notions based on the distinction between anticipated and unanticipated inflation. When price increases are anticipated, individuals can adjust to them with little, if any cost, while they cannot, when they come as a “shock”. Adjustment is all the more costly, the higher is the *variability* in aggregate inflation and in relative prices caused by an increase in inflation. People then must invest a lot of effort to inform themselves about, and to insulate themselves from, the expected price increases. They may make many different errors, for instance in underestimating the extent of future inflation, or how a particular price changes in comparison with other prices.

Depending on a set of (rather restrictive) assumptions, the welfare costs of rising prices can be captured by computing the appropriate area under the money demand curve, the basic idea being that economizing on the use of currency imposes costs in terms of well-being. They are reflected indirectly by the demand for money curve. Based on this method, the cost of a ten percent yearly inflation has been calculated to be between 0.3 percent and 0.45 percent of national income (Stanley Fischer 1981; Robert Lucas 1981). This is very little and suggests that an anti-inflationary policy rarely is worth the cost it entails in terms of additional unemployment and real income loss.

But many economists would strongly disagree with this conclusion. They point out that stable prices are a crucial prerequisite for a sound economy in which suppliers and demanders can act rationally. Most economists take an intermediate position, not least because the picture emerging from the existing empirical evidence on the costs of inflation is far from clear (see the survey by John Drifill, Grayham Mizon, and Alistair Ulph 1990). The “common opinion” of academic economists probably is that rampant inflation is very dangerous for the economy,

while a constant, and hence predictable, but low inflation (say 1-5 percent per year) is not taken to cause any major problems.

The population seems to feel quite differently. An extensive survey in the United States, Germany and Brazil (Robert Shiller 1997) finds that people are concerned about quite different issues connected with inflation than are economists. People seem to disregard the fact that inflation probably also raises their own nominal income. They obviously concentrate on the possible harm, but not on the possible benefits, of inflation on their standard of living. In addition, the survey identifies other concerns generally neglected by economists. One is that inflation allows opportunists to exploit others in an unfair and dishonest way; another is that inflation undermines the moral basis of society. Many fear that inflation produces political and economic chaos and a loss in national prestige due to the falling exchange rate.

Happiness research finds that inflation systematically and sizeably lowers reported individual well-being. In European countries, the effect on happiness of a one percentage point increase in unemployment is compensated by a 1.7 percentage point decrease in inflation. The relative size of inflation is thus smaller than in the “Misery Index”, which attaches equal weight to both percentage changes.

*Effects of democracy.* Consequences of democratic rules have mainly been analyzed in economics with regard to their effects on economic growth. Data on subjective well-being allow us to look at the interaction between democracy and happiness. The extent to which a constitution is democratic and allows its citizens to make decisions according to their own preferences can be captured by various measures. It is found that increased possibilities to directly participate in public decision-making via popular referenda and a decentralized state significantly contribute to happiness.

#### 7.4 *Open Issues*

The research on happiness undertaken leaves many questions open. At the same time it opens up challenging new areas. Further progress is especially needed in four areas:

*Effects of happiness on behavior.* Economists have mainly studied the effects of behavior on subjective well-being, as represented by variables such as unemployment, inflation and income. The reverse effect has so far received scant attention (for a theoretical investigation see, for example, Benjamin Hermalin and Alice Isen 1999). In the following, we present some ideas for future research that are particularly relevant from the economic point of view.

The extent of happiness may influence many important economic decisions. Examples are:

- *Consumption activities.* Happy individuals are more likely to save and spend different proportions of their income, to distribute spending differently over time, and to acquire different combinations of particular goods and services than do less happy persons (e.g. Barbara Kahn and Isen 1993).
- *Work behavior.* Happier individuals may differ significantly in their behavior on the job. A large literature on job satisfaction (e.g. Peter Warr 1999) analyzes, for example, whether more satisfied workers are also more productive (Michelle Iaffaldano and Paul Muchinsky 1985).
- *Investment behavior.* It can be hypothesized that happier individuals have a different attitude to taking risks than less happy individuals. They may also prefer different markets and types of financial investments.
- *Political behavior.* Happy individuals are likely to vote for different politicians and parties, and for different alternatives in referenda, than unhappy individuals. It has, for instance, been found that such a difference exists where attitudes towards the European Union are concerned (Francis Castles 1998).

*Application of happiness analysis on further areas.* There are many topics in economic research for which a complementary analysis of survey data on subjective well-being would be worthwhile. Possible questions are:

- *Discrimination of women.* Is there a relationship between discrimination of women on the labor market and their life satisfaction (see e.g. Clark 1997; and Alfonso Sousa-Poza and Andrés Sousa-Poza 2000)?
- *Quality of life indicators.* How are various quality of life indicators like crime, environmental quality, traffic accidents, commuting, etc. related to subjective well-being (see e.g. Michalos and Bruno Zumbo 2000)?
- *Growth analysis.* Are there systematic differences in measures of subjective well-being for different paths of growth or development (see e.g. Kenny 1999)?

Special emphasis may be put on a *broader set of institutions*. Studies on the impact of institutions on happiness have so far mainly been confined to two elements, namely (direct) democracy and federalism. They certainly count among the most important basic aspects of a constitution, but there are many other institutions whose impact on subjective well-being is worth studying. Examples would be the institutions of monetary policy, such as the extent of independence of the central bank; the importance of corporatism in policy making; or the

prevalence of centralized or firm level wage bargaining between trade unions and employer associations.

*Application of More Advanced Methods.* Most comparative studies of happiness between countries employ multiple cross-section regressions. This has been a very useful starting point, but the next important step is to use panel data. The spread of this technique in happiness research is still poor (exceptions are, e.g., Ravallion and Lokshin 2001 and Winkelmann and Winkelmann 1998), mostly because of the lack of necessary data on happiness. Another advanced method is demographers' cohort analysis technique for life cycle studies. Its application in happiness research is only just beginning (in particular in the work of Easterlin 2001).

*Improved Happiness Measurements.* There is also room for improvement in the quality of the happiness data (e.g. Diener, Suh, Lucas and Smith 1999, pp. 277-8) as well as in its systematic collection. In particular, there is still a lack of data on subjective well-being in developing and transition countries. Repeated surveys with equal single- or multi-item scales in these countries would render superfluous the questionable technique of merging responses to different happiness questions.

Economists should, however, not be too critical, in view of the deficiencies of what they traditionally measure and use as indicators for individual and aggregate welfare. National income, whose shortcomings are obvious, is a case in point.

This paper has reached its goal if it has convinced the reader that happiness research is not a futile or eccentric activity, but is able to provide relevant new insights and can serve as an inspiration for future research in economics.

## REFERENCES

- Alesina, Alberto, Rafael Di Tella and Robert MacCulloch (2001). Inequality and Happiness: Are Europeans and Americans Different? NBER Working Paper No. 8198. Cambridge, MA: National Bureau of Economic Research.
- Allen, Roy G. D. (1934). A Reconsideration of the Theory of Value, II. *Economica* 1: 196-219.
- Andrews, Frank M. and John P. Robinson (1991). Measures of Subjective Well-Being. In: John P. Robinson, Phillip R. Shaver and Lawrence S. Wrightsman (eds). *Measures of Personality and Social Psychological Attitudes*. San Diego, CA: Academic Press: 61-114.
- Argyle, Michael (1987). *The Psychology of Happiness*. London: Methuen.
- Argyle, Michael (1999). Causes and Correlates of Happiness. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 353-373.
- Becker, Gary S. (1974). A Theory of Social Interactions. *Journal of Political Economy* 82(6): 1063-93.
- Bertrand, Marianne and Sendhil Mullainathan (2001). Do People Mean What They Say? Implications for Subjective Survey Data. *American Economic Review* 91(2): 67-72.
- Björklund, Anders and Tor Eriksson (1998). Unemployment and Mental Health: A Survey of Nordic Research. *Scandinavian Journal of Social Welfare* 7: 219-235.
- Blanchflower, David G. (1996). Youth Labor Markets in Twenty Three Countries: A Comparison Using Micro Data. In: David Stern (eds). *School to Work Policies and Practices in Thirteen Countries*. Cresskill: Hampton Press.
- Blanchflower, David G. and Andrew J. Oswald (2000). Well-Being Over Time in Britain and the USA. NBER Working Paper No. 7487. Cambridge, MA: National Bureau of Economic Research.
- Boskin, Michael and Evtan Sheshinski (1978). Optimal Redistributive Taxation When Individual Welfare Depends on Relative Income. *Quarterly Journal of Economics* 92(4): 589-601.
- Brennan, Geoffrey and James M. Buchanan (1985). *The Reason of Rules. Constitutional Political Economy*. Cambridge: Cambridge University Press.
- Brickman, Philip and Donald T. Campbell (1971). Hedonic Relativism and Planning the Good Society. In: Mortimer H. Appley (ed.). *Adaptation Level Theory: A Symposium*. New York: Academic Press: 287-304.
- Brickman, Philip, Dan Coates and Ronnie Janoff-Bulman (1978). Lottery Winners and Accident Victims: Is Happiness Relative? *Journal of Personality and Social Psychology* 36(8): 917-927.
- Buchanan, James M. (1965). An Economic Theory of Clubs. *Economica* 32(1): 1-14.
- Butler, David and Austin Ranney (eds) (1994). *Referendums around the World. The Growing Use of Direct Democracy*. Washington, D.C.: AEI Press.
- Carroll, Christopher D. and David N. Weil (1994). Saving and Growth: A Reinterpretation. *Carnegie-Rochester Conference Series on Public Policy* 40(0): 133-192.
- Castles, Francis G. (1998). Die Bedeutung der Oekonomie für die politische Unterstützung der Europäischen Union. In: Thomas König, Elmar Rieger und Hermann Schmitt (eds). *Europa der Bürger? Voraussetzungen, Alternativen, Konsequenzen*. Frankfurt: Campus Verlag: 159-176.
- Charness, Gary and Brit Grosskopf (2001). Relative Payoffs and Happiness: An Experimental Study. *Journal of Economic Behavior and Organization* 45(3): 301-28.
- Clark, Andrew E. (1997). Job Satisfaction and Gender: Why Are Women So Happy at Work? *Labour Economics* 4(4): 341-372.
- Clark, Andrew E. (2000). Unemployment as a Social Norm: Psychological Evidence from Panel Data. Mimeo. University of Orléans, France.

- Clark, Andrew E. and Andrew J. Oswald (1994). Unhappiness and Unemployment. *Economic Journal* 104(424): 648-659.
- Clark, Andrew E. and Andrew J. Oswald (1996). Satisfaction and Comparison Income. *Journal of Public Economics* 61(3): 359-381.
- Clark, Andrew E. and Andrew J. Oswald (1998). Comparison-Concave Utility and Following Behaviour in Social and Economic Settings. *Journal of Public Economics* 70(1): 133-155.
- Clark, Andrew E., Yannis Georgellis and Peter Sanfey (2001). Scarring: The Psychological Impact of Past Unemployment. *Economica* 68(270): 221-41.
- Costa, Paul T. and Robert R. McCrae (1988). Personality in Adulthood: A Six-Year Longitudinal Study of Self-Reports and Spouse Ratings on the NEO Personality Inventory. *Journal of Personality and Social Psychology* 54(5): 853-863.
- Darity, William and Arthur H. Goldsmith (1996). Social Psychology, Unemployment and Macroeconomics. *Journal of Economic Perspectives* 10(1): 121-140.
- Davidson, Richard J., John R. Marshall, Andrew J. Tomarken and Jeffrey B. Henriques (2000). While a Phobic Waits: Regional Brain Electrical and Autonomic Activity in Social Phobics During Anticipation of Public Speaking. *Biological Psychiatry* 47(2): 85-95.
- Davis, James A., Tom W. Smith and Peter V. Marsden (2001). *General Social Survey, 1972-2000: Cumulative Codebook*. Storrs, CT: The Roper Center for Public Opinion Research.
- DeNeve, Kristina M. and Harris Cooper (1998). The Happy Personality: A Meta-Analysis of 137 Personality Traits and Subjective Well-Being. *Psychological Bulletin* 124(2): 197-229.
- Dew, Mary Amanda, Evelyn J. Bromet and Lili Penkower (1992). Mental Health Effects of Job Loss in Women. *Psychological Medicine* 22(3): 751-764.
- Di Tella, Rafael, Robert J. MacCulloch and Andrew J. Oswald (1999). How Do Macroeconomic Fluctuations Affect Happiness? Mimeo. Harvard Business School.
- Di Tella, Rafael, Robert J. MacCulloch and Andrew J. Oswald (2001). Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness. *American Economic Review* 91(1): 335-341.
- Diener, Ed (1984). Subjective Well-Being. *Psychological Bulletin* 95(3): 542-575.
- Diener, Ed, Marissa Diener and Carol Diener (1995). Factors Predicting the Subjective Well-Being of Nations. *Journal of Personality and Social Psychology* 69(5): 851-864.
- Diener, Ed and Shigehiro Oishi (2000). Money and Happiness: Income and Subjective Well-Being Across Nations. In: Ed Diener and Eunkook M. Suh (eds). *Culture and Subjective Well-Being*. Cambridge, MA: MIT Press: 185-218.
- Diener, Ed, Eunkook M. Suh, Richard E. Lucas and Heidi L. Smith (1999). Subjective Well-Being: Three Decades of Progress. *Psychological Bulletin* 125(2): 276-303.
- Drifill, John, Grayham E. Mizon and Alistair Ulph (1990). Costs of Inflation. In: Benjamin M. Friedman and Frank H. Hahn (eds). *Handbook of Monetary Economics*, Volume II. Amsterdam: North-Holland: 1014-1066.
- Duesenberry, James S. (1949). *Income, Savings and the Theory of Consumer Behavior*. Cambridge, MA: Harvard University Press.
- Easterlin, Richard A. (1974). Does Economic Growth Improve the Human Lot? Some Empirical Evidence. In: Paul A. David and Melvin W. Reder (eds). *Nations and Households in Economic Growth: Essays in Honor of Moses Abramowitz*. New York: Academic Press: 89-125.
- Easterlin, Richard A. (1995). Will Raising the Incomes of All Increase the Happiness of All? *Journal of Economic Behaviour and Organization* 27(1): 35-48.
- Easterlin, Richard A. (2000). The Worldwide Standard of Living Since 1800. *Journal of Economic Perspectives* 14(1): 7-26.
- Easterlin, Richard A. (2001). Income and Happiness: Towards a Unified Theory. *Economic Journal* 111(473): 465-484.



- Ehrhardt, Joop J., Willem E. Saris and Ruut Veenhoven (2000). Stability of Life-satisfaction over Time. *Journal of Happiness Studies* 1(2): 177-205.
- Elster, Jon (1998). Emotions and Economic Theory. *Journal of Economic Literature* 36(1): 47-74.
- Falk, Armin and Markus Knell (2000). Choosing the Joneses: On the Endogeneity of Reference Groups. Working Paper No. 59, Institute for Empirical Research in Economics. University of Zurich.
- Feather, Norman T. (1990). *The Psychological Impact of Unemployment*. New York: Springer.
- Feld, Lars P. and Marcel R. Savioz (1997). Direct Democracy Matters for Economic Performance: An Empirical Investigation. *Kyklos* 50(4): 507-538.
- Fernández-Dols, José-Miguel and María-Angeles Ruiz-Belda (1990). Are Smiles a Sign of Happiness? Gold Medal Winners at the Olympic Games. *Journal of Personality and Social Psychology* 69(6): 1113-1119.
- Fischer, Stanley (1981). Towards an Understanding of the Costs of Inflation: II. *Carnegie-Rochester Conference Series on Public Policy* 15(0): 5-41.
- Fordyce, Meredith A. (1988). A review of research on happiness measures: a sixty second index of happiness and mental health. *Social Indicators Research*, 20: 355-81.
- Frank, Robert H. (1985). *Choosing the Right Pond*. New York: Oxford University Press.
- Frank, Robert H. (1997). The Frame of Reference as a Public Good. *Economic Journal* 107(445): 1832-1847.
- Frank, Robert H. (1999). *Luxury Fever. Why Money Fails to Satisfy in an Era of Excess*. New York: Free Press.
- Frederick, Shane and George Loewenstein (1999). Hedonic Adaptation. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 302-329.
- Frey, Bruno S. (1983). *Democratic Economic Policy*. Oxford: Blackwell.
- Frey, Bruno S. (1997). A Constitution for Knaves Crowds Out Civic Virtues. *Economic Journal* 107(443): 1043-1053.
- Frey, Bruno S. and Alois Stutzer (1999). Measuring Preferences by Subjective Well-Being. *Journal of Institutional and Theoretical Economics* 155(4): 755-788.
- Frey, Bruno S. and Alois Stutzer (2000). Happiness, Economy and Institutions. *Economic Journal* 110(446): 918-38.
- Frey, Bruno S. and Alois Stutzer (2002). *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being*. Forthcoming with Princeton University Press.
- Galbraith, John Kenneth (1958). *The Affluent Society*. Harmondsworth: Penguin Books.
- Gardner, Jonathan and Andrew J. Oswald (2001). Does Money Buy Happiness? A Longitudinal Study Using Data on Windfalls. Mimeo. Warwick University.
- Gerlach, Knut and Gesine Stephan (1996). A Paper on Unhappiness and Unemployment in Germany. *Economics Letters* 52(3): 325-330.
- Goldberg, David P. (1972). *The Detection of Psychiatric Illness by Questionnaire*. Oxford: Oxford University Press.
- Goldsmith, Arthur, Jonathan R. Veum and William Darity Jr. (1996). The Impact of Labor Force History on Self-Esteem and its Component Parts, Anxiety, Alienation and Depression. *Journal of Economic Psychology* 17(2): 183-220.
- Graetz, Brian (1993). Health Consequences of Employment and Unemployment: Longitudinal Evidence for Young Men and Women. *Social Science and Medicine* 36(6): 715-724.
- Graham, Carol and Stefano Pettinato (2001a). Frustrated Achievers: Winners, Losers, and Subjective Well Being in New Market Economies. Forthcoming in *Journal of Development Studies*.

- Graham, Carol and Stefano Pettinato (2001b). Happiness, Markets, and Democracy: Latin America in Comparative Perspective. Forthcoming in *Journal of Happiness Studies*.
- Headey, Bruce and Alexander Wearing (1991). Subjective Well-Being: A Stocks and Flows Framework. In: Fritz Strack, Michael Argyle and Norbert Schwarz (eds). *Subjective Well-Being: An Interdisciplinary Perspective*. Oxford: Pergamon Press: 7-26.
- Helliwell, John F. (2001). How's Life? Combining Individual and National Variables to Explain Subjective Well-Being. Mimeo, Department of Economics, University of British Columbia.
- Helson, Harry (1964). *Adaptation-Level Theory: An Experimental and Systematic Approach to Behavior*. New York: Harper and Row.
- Hermalin, Benjamin E. and Alice M. Isen (1999). The Effect of Affect on Economic and Strategic Decision-Making. Mimeo. University of California, Berkeley.
- Hicks, John R. (1934). A Reconsideration of the Theory of Value, I. *Economica* 1: 52-75.
- Hirsch, Fred (1976). *The Social Limits to Growth*. Cambridge, MA: Harvard University Press.
- Hirschman, Albert O. (1970). *Exit, Voice and Loyalty*. Cambridge, MA: Harvard University Press.
- Holländer, Heinz (2001). On the Validity of Utility Statements: Standard Theory versus Duesenberry's. *Journal of Economic Behavior and Organization* 45(3): 227-49.
- Iaffaldano, Michelle T. and Paul M. Muchinsky (1985). Job Satisfaction and Job Performance: A Meta-Analysis. *Psychological Bulletin* 97(2): 251-273.
- Inglehart, Ronald F. (1990). *Culture Shift in Advanced Industrial Society*. Princeton: Princeton University Press.
- Inglehart, Ronald F. (1999). Trust, Well-Being and Democracy. In: Mark E. Warren (ed.). *Democracy and Trust*. Cambridge, UK: Cambridge University Press: 88-120.
- Inglehart, Ronald, et al. (2000). *World Values Surveys and Surveys and European Values Surveys, 1981-1984, 1990-1993, and 1995-1997* [Computer file]. ICPSR version. Ann Arbor, MI: Institute for Social Research [producer], 1999. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].
- Irwin, Francis W. (1944). The Realism of Expectations. *Psychological Review* 51: 120-126.
- Kahn, Barbara E. and Alice M. Isen (1993). The Influence of Positive Affect on Variety Seeking among Safe, Enjoyable Products. *Journal of Consumer Research* 20(2): 257-70.
- Kahneman, Daniel (1999). Objective Happiness. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 3-25.
- Kahneman, Daniel, Ed Diener and Norbert Schwarz (eds) (1999). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation.
- Kahneman, Daniel, Peter P. Wakker and Rakesh Sarin (1997). Back to Bentham? Explorations of Experienced Utility. *Quarterly Journal of Economics* 112(2): 375-405.
- Kasser, Tim and Richard M. Ryan (2001). Be Careful What You Wish For: Optimal Functioning and the Relative Attainment of Intrinsic and Extrinsic Goals. In: Peter Schmuck and Kennon M. Sheldon (eds). *Life Goals and Well-Being. Towards a Positive Psychology of Human Striving*. Kirkland, WA: Hogrefe and Huber: 116-131.
- Kelvin, Peter and Joanna E. Jarrett (1985). *The Social Psychological Effects of Unemployment*. Cambridge: Cambridge University Press.
- Kenny, Charles (1999). Does Growth Cause Happiness, or Does Happiness Cause Growth? *Kyklos* 52(1): 3-26.
- Koivumaa, Honkanen Heli, Risto Honkanen, Heimo Viinamaeki, Kauko Heikkilae, Jaakko Kaprio, Markku Koskenvuo (2001). Life Satisfaction and Suicide: A 20-Year Follow-up Study. *American Journal of Psychiatry* 158(3): 433-439.
- Konow, James and Joseph Earley (1999). The Hedonistic Paradox: Is Homo Economicus Happier? Mimeo. Loyola Marymount University, Los Angeles.

- Korpi, Tomas (1997). Is Well-Being Related to Employment Status? Unemployment, Labor Market Policies and Subjective Well-Being among Swedish Youth. *Labour Economics* 4(2): 125-147.
- Lane, Robert E. (1998). The Joyless Market Economy. In: Avner Ben-Ner and Louis Putterman (eds). *Economics, Values, and Organization*. Cambridge: Cambridge University Press: 461-488.
- Lane, Robert E. (2000). *The Loss of Happiness in Market Economies*. New Haven and London: Yale University Press.
- Larsen, Randy J. and Barbara L. Fredrickson (1999). Measurement Issues in Emotion Research. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 40-60.
- Layard, Richard (1980). Human Satisfaction and Public Policy. *Economic Journal* 90(363): 737-750.
- Le Menestrel, Marc (2001). A Process Approach to the Utility for Gambling. *Theory and Decision* 50(3): 249-62.
- Lepper, Heidi S. (1998). Use of Other-Reports to Validate Subjective Well-Being Measures. *Social Indicators Research* 44(3): 367-379.
- Loewenstein, George (1999). Because It Is There: The Challenge of Mountaineering ... for Utility Theory. *Kyklos* 52(3): 315-343.
- Loewenstein, George, Ted O'Donoghue and Matthew Rabin (2000). Projection Bias in Predicting Future Utility. Mimeo. Carnegie-Mellon University.
- Lucas, Richard E., Ed Diener and Eunkook Suh (1996). Discriminant Validity of Well-Being Measures. *Journal of Personality and Social Psychology* 71(3): 616-628.
- Lucas, Robert E. Jr. (1981). Discussion of: Stanley Fischer, 'Towards an Understanding of the Costs of Inflation: II'. *Carnegie - Rochester Conference Series on Public Choice* 15(0): 43-52.
- Marks, Gary N. and Nicole Fleming (1999). Influences and Consequences of Well-being Among Australian Young People: 1980-1995. *Social Indicators Research* 46(3): 301-323.
- Marshall, Alfred (1890). *The Principles of Economics*. 8th ed. (1920), London: Macmillan.
- Matsusaka, John G. (1995). Fiscal Effects of the Voter Initiative: Evidence from the Last 30 Years. *Journal of Political Economy* 103(2): 587-623.
- McEachern, William A. (1978). Collective Decision Rules and Local Debt Choice: A Test of the Median Voter Hypothesis. *National Tax Journal* 31(2): 129-136.
- Michalos, Alex C. (1991). *Global Report on Student Well-Being. Volume 1: Life Satisfaction and Happiness*. New York: Springer.
- Michalos, Alex C. and Bruno D. Zumbo (2000). Criminal Victimization and the Quality of Life. *Social Indicators Research* 50(3): 245-295.
- Modigliani, Franco (1949). *Fluctuations in the Saving-Income Ratio: A Problem in Economic Forecasting*. Conference on Research in Income and Wealth. New York.
- Mueller, Dennis C. (ed.) (1997). *Perspectives on Public Choice. A Handbook*. Cambridge: Cambridge University Press.
- Murphy, Gregory C. and James A. Athanasou (1999). The Effect of Unemployment on Mental Health. *Journal of Occupational and Organizational Psychology* 72(1): 83-99.
- Myers, David G. (1993). *The Pursuit of Happiness: Who Is Happy and Why?* New York: Avon.
- Myers, David G. (2000). The Funds, Friends, and Faith of Happy People. *American Psychologist* 55(1): 56-67.
- Neumark, David and Andrew Postlewaite (1998). Relative Income Concerns and the Rise in Married Women's Employment. *Journal of Public Economics* 70(1): 157-183.
- Ng, Yew-Kwang (1996). Happiness Surveys: Some Comparability Issues and an Exploratory Survey Based on Just Perceivable Increments. *Social Indicators Research* 38(1): 1-27.

- Ng, Yew-Kwang (1997). A Case for Happiness, Cardinalism, and Interpersonal Comparability. *Economic Journal* 107(445): 1848-1858.
- Ng, Yew-Kwang (2001). From Preference to Happiness: Towards a More Complete Welfare Economics. Mimeo, Department of Economics, Monash University.
- Oswald, Andrew J. (1997). Happiness and Economic Performance. *Economic Journal* 107(445): 1815-1831.
- Parducci, Allen (1995). *Happiness, Pleasure, and Judgment: The Contextual Theory and Its Applications*. Hillsdale, NJ: Erlbaum.
- Pavot, William and Ed Diener (1993). The Affective and Cognitive Context of Self-Reported Measures of Subjective Well-Being. *Social Indicators Research* 28(1): 1-20.
- Plug, Erik J. S. and Bernard M. S. van Praag (1995). Family Equivalence Scales within a Narrow and Broad Welfare Context. *Journal of Income Distribution* 4(2): 171-186.
- Pollak, Robert A. (1970). Habit Formation and Dynamic Demand Functions. *Journal of Political Economy* 78(4): 745-763.
- Pommerehne, Werner W. (1978). Institutional Approaches to Public Expenditure: Empirical Evidence from Swiss Municipalities. *Journal of Public Economics* 9(2): 225-280.
- Pommerehne, Werner W. (1990). The Empirical Relevance of Comparative Institutional Analysis. *European Economic Review* 34(2-3): 458-469.
- Pommerehne, Werner W. and Friedrich Schneider (1978). Fiscal Illusion, Political Institutions and Local Public Spending. *Kyklos* 31(3): 381-408.
- Pommerehne, Werner W. and Hannelore Weck-Hannemann (1996). Tax Rates, Tax Administration and Income Tax Evasion in Switzerland. *Public Choice* 88(1-2): 161-170.
- Ravallion, Martin and Michael Lokshin (2001). Identifying Welfare Effects from Subjective Questions. *Economica* 68(271): 335-357.
- Robbins, Lionel C. (1932). *An Essay on the Nature and Significance of Economic Science*. London: Macmillan. Selections reprinted in Daniel M. Hausman (ed.). (1984) *The Philosophy of Economics: An Anthology*. New York: Cambridge University Press.
- Ruhm, Christopher J. (2000). Are Recessions Good for Your Health? *Quarterly Journal of Economics* 115(2): 617-50.
- Ryan, Richard M. and Edward L. Deci (2001). To Be Happy or To Be Self-Fulfilled: A Review of Research on Hedonic and Eudaimonic Well-Being. In: S. Fiske (eds). *Annual Review of Psychology*, Vol. 52. Palo Alto, CA: Annual Reviews: 141-166.
- Sandvik, Ed, Ed Diener and Larry Seidlitz (1993). Subjective Well-Being: The Convergence and Stability of Self-Report and Non-Self-Report Measures. *Journal of Personality* 61(3): 317-42.
- Santerre, Rexford E. (1986). Representative versus Direct Democracy: A Tiebout Test of Relative Performance. *Public Choice* 48(1): 55-63.
- Santerre, Rexford E. (1989). Representative versus Direct Democracy: Are There Any Expenditure Differences? *Public Choice* 60(2): 145-154.
- Schwarz, Norbert and Fritz Strack (1999). Reports of Subjective Well-Being: Judgmental Processes and Their Methodological Implications. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 61-84.
- Scitovsky, Tibor (1976). *The Joyless Economy: An Inquiry into Human Satisfaction and Dissatisfaction*. Oxford: Oxford University Press.
- Sen, Amartya K. (1986). The Standard of Living. In: Sterling McMurrin (ed.). *Tanner Lectures on Human Values*, Volume VII. Cambridge, UK: Cambridge University Press.
- Sen, Amartya K. (1995). Rationality and Social Choice. *American Economic Review* 85(1): 1-24.
- Sen, Amartya K. (1997). Maximization and the Act of Choice. *Econometrica* 65(4): 745-779.

- Shiller, Robert J. (1997). Why Do People Dislike Inflation? In: Christina D. Romer and David H. Romer (eds). *Reducing Inflation: Motivation and Strategy*. Chicago and London: The University of Chicago Press: 13-65.
- Sirgy, M. Joseph (1997). Materialism and Quality of Life. *Social Indicators Research* 43(3): 227-260.
- Slesnick, Daniel T. (1998). Empirical Approaches to the Measurement of Welfare. *Journal of Economic Literature* 36(4): 2108-2165.
- Smith, Richard H., Ed Diener and Douglas H. Wedell (1989). Intrapersonal and Social Comparison Determinants of Happiness: A Range-Frequency Analysis. *Journal of Personality and Social Psychology* 56(3): 317-325.
- Smith, Stephen and Peter Razzell (1975). *The Pools Winners*. London: Caliban Books.
- Sousa-Poza, Alfonso and Andrés A. Sousa-Poza (2000). Taking Another Look at the Gender/Job-Satisfaction Paradox. *Kyklos* 53(2): 135-152.
- Strack, Fritz, Michael Argyle and Norbert Schwarz (eds) (1991). *Subjective Well-Being: An Interdisciplinary Perspective*. Oxford: Pergamon Press.
- Stutzer, Alois and Rafael Lalive (2000). The Role of Social Work Norms in Job Searching and Subjective Well-Being. Working Paper No. 51, Institute for Empirical Research in Economics. University of Zurich.
- Thaler, Richard H. (1992). *The Winner's Curse. Paradoxes and Anomalies of Economic Life*. New York: Free Press.
- Theil, Henry (1964). *Optimal Decision Rules for Government and Industry*. Amsterdam: North Holland.
- Tiebout, Charles M. (1956). A Pure Theory of Local Expenditure. *Journal of Political Economy* 64(October): 416-424.
- Tinbergen, Jan (1956). *Economic Policy: Principles and Design*. Amsterdam: North Holland.
- Tversky, Amos and Dale Griffin (1991). Endowment and Contrast in Judgments of Well-Being. In: Richard J. Zeckhauser (ed.). *Strategy and Choice*. Cambridge and London: MIT Press: 297-318.
- van de Stadt, Huib, Arie Kapteyn and Sara van de Geer (1985). The Relativity of Utility: Evidence from Panel Data. *Review of Economics and Statistics* 67(2): 179-87.
- van Herwaarden, Floor, Arie Kapteyn and Bernard M. S. van Praag (1977). Twelve Thousand Individual Welfare Functions: A Comparison of Six Samples in Belgium and The Netherlands. *European Economic Review* 9(3): 283-300.
- van Praag, Bernard M. S. (1991). Ordinal and Cardinal Utility. An Integration of the Two Dimensions of the Welfare Concept. *Journal of Econometrics* 50: 69-89.
- van Praag, Bernard M. S. (1993). The Relativity of the Welfare Concept. In: Martha Nussbaum and Amartya K. Sen (eds). *The Quality of Life*. Oxford: Clarendon: 362-416.
- van Praag, Bernard M. S. and Paul Frijters (1999). The Measurement of Welfare and Well-Being: The Leyden Approach. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 413-433.
- van Praag, Bernard M. S. and Arie Kapteyn (1973). Further Evidence on the Individual Welfare Function of Income: An Empirical Investigation in the Netherlands. *European Economic Review* 4(1): 33-62.
- Veblen, Thorstein (1899). *The Theory of Leisure Class*. New York: Modern Library.
- Veenhoven, Ruut (1993). *Happiness in Nations: Subjective Appreciation of Life in 56 Nations 1946-1992*. Rotterdam: Erasmus University Press.
- Veenhoven, Ruut (2000). Freedom and Happiness: A Comparative Study in Forty-four Nations in the Early 1990s. In: Ed Diener and Eunkook M. Suh (eds). *Culture and Subjective Well-Being*. Cambridge, MA: MIT Press: 257-288.

- Warr, Peter (1999). Well-Being and the Workplace. In: Daniel Kahneman, Ed Diener and Norbert Schwarz (eds). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation: 392-412.
- Winkelmann, Liliana and Rainer Winkelmann (1998). Why Are the Unemployed So Unhappy? Evidence from Panel Data. *Economica* 65(257): 1-15.

TABLE 1  
HAPPINESS AND EQUIVALENCE INCOME IN THE USA

Equivalence income <sup>a</sup> (1996 US \$)	Mean happiness rating <sup>b</sup>		Mean equivalence income		Number of observations	
	1972-74	1994-96	1972-74	1994-96	1972-74	1994-96
Full sample	2.21	2.17	17434	20767	4214	5171
Decile						
1	1.92	1.94	2522	2586	421	499
2	2.09	2.03	5777	5867	419	528
3	2.17	2.07	8694	8634	417	497
4	2.22	2.15	11114	11533	416	542
5	2.19	2.19	13517	14763	391	512
6	2.29	2.29	15979	17666	460	500
7	2.24	2.20	18713	21128	393	527
8	2.31	2.20	22343	25745	447	529
9	2.26	2.30	28473	34688	427	472
10	2.36	2.36	46338	61836	423	565

*Source:* General Social Survey, National Opinion Research Center. Variables 34, 157 and 1028. ‘Don’t know’ and ‘no answer’ responses are omitted.

<sup>a</sup> Total household income divided by the square root of the total number of household members.

<sup>b</sup> Based on score of ‘not too happy’ = 1, ‘pretty happy’ = 2 and ‘very happy’ = 3.

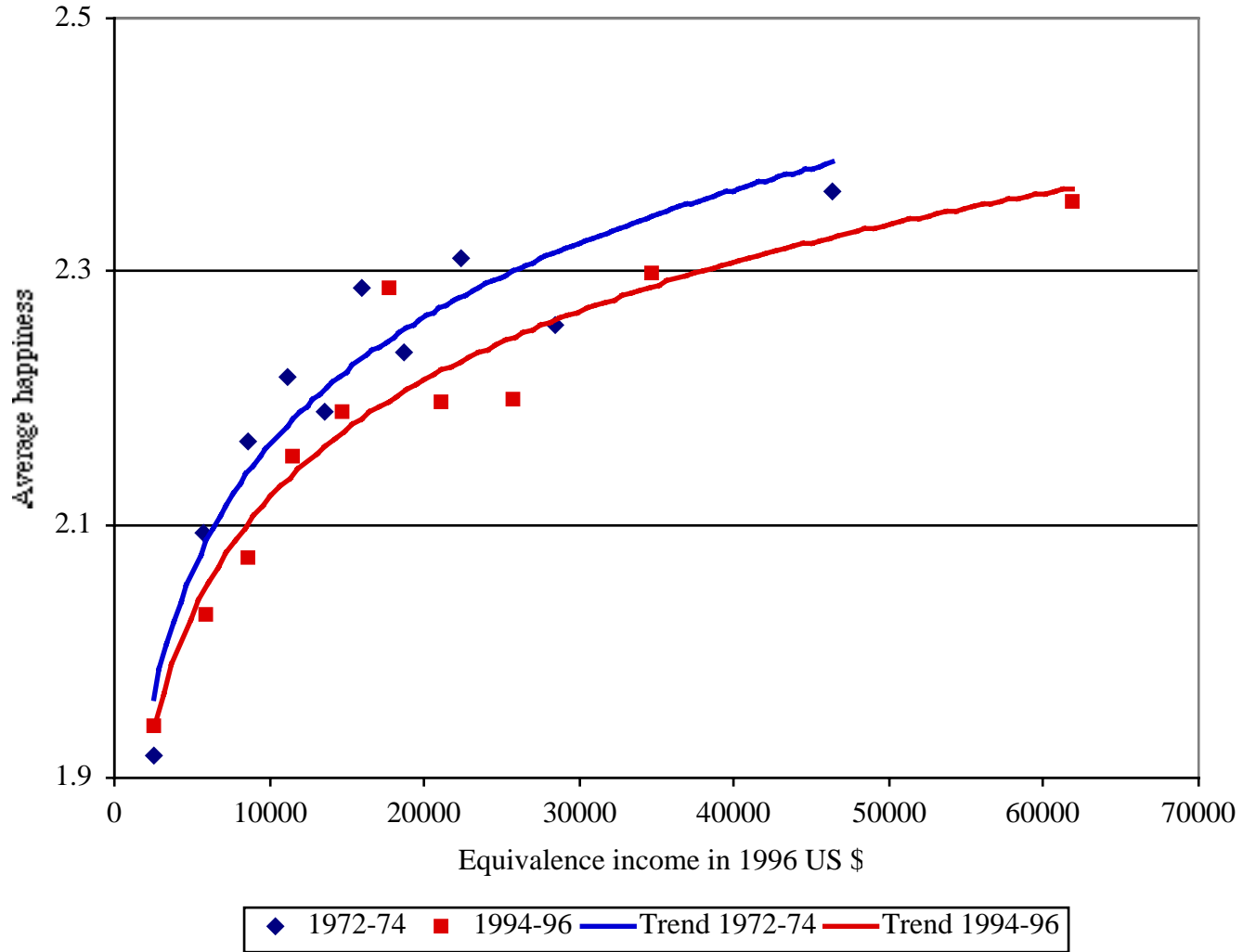


Figure 1. Happiness and Equivalence Income in the U.S.

Source: General Social Survey, National Opinion Research Center.



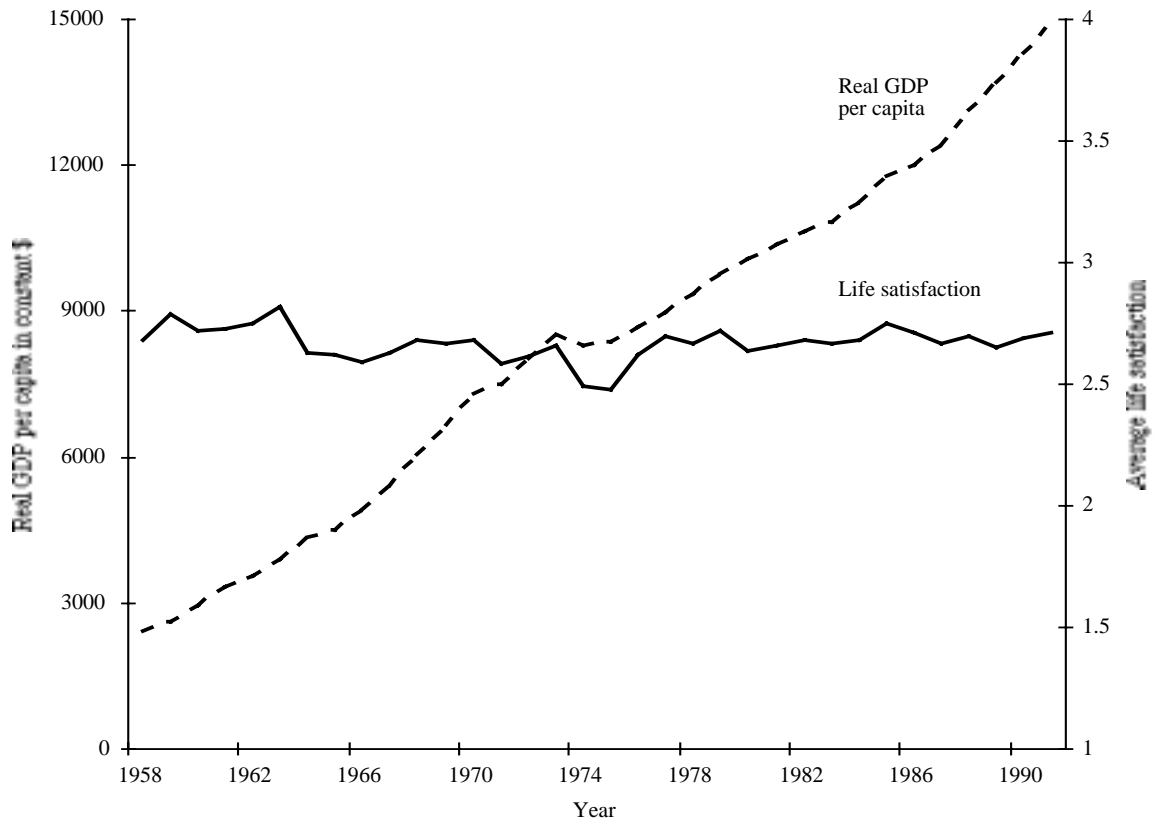


Figure 2. Satisfaction with Life and Income per Capita in Japan between 1958 and 1991

Sources: Penn World Tables and World Database of Happiness.

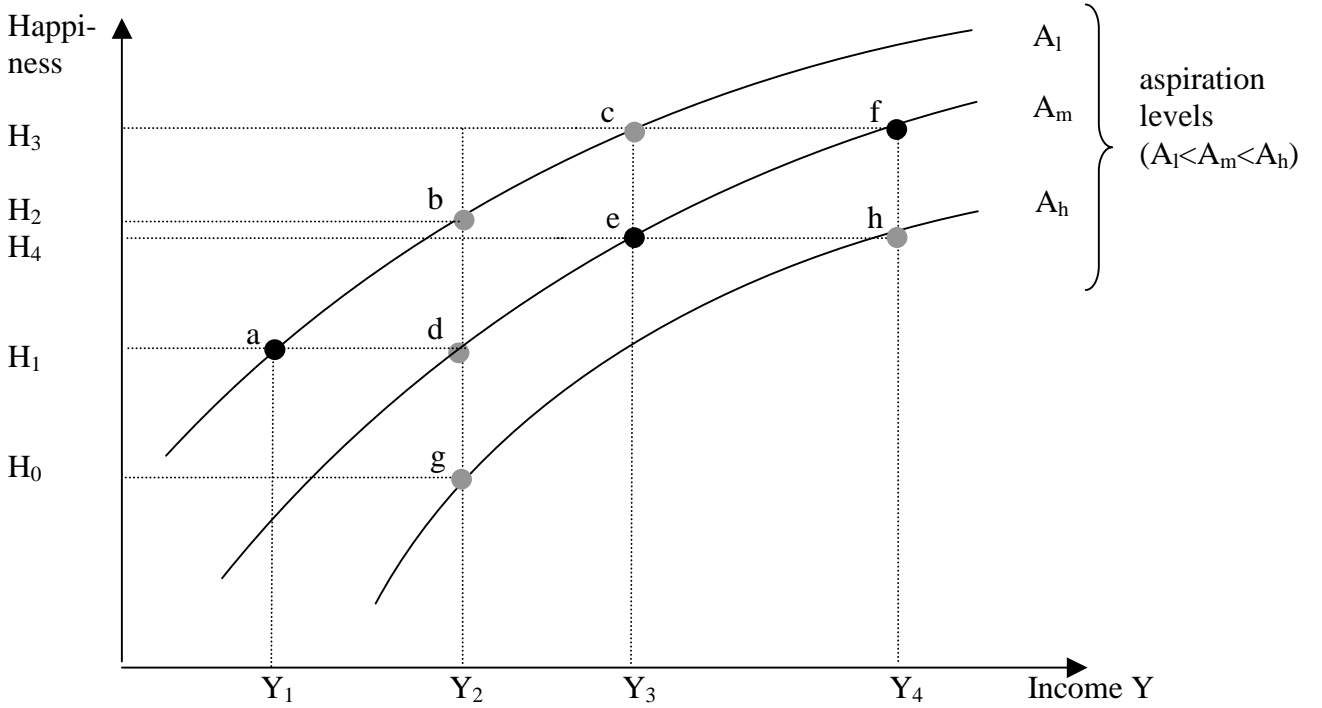
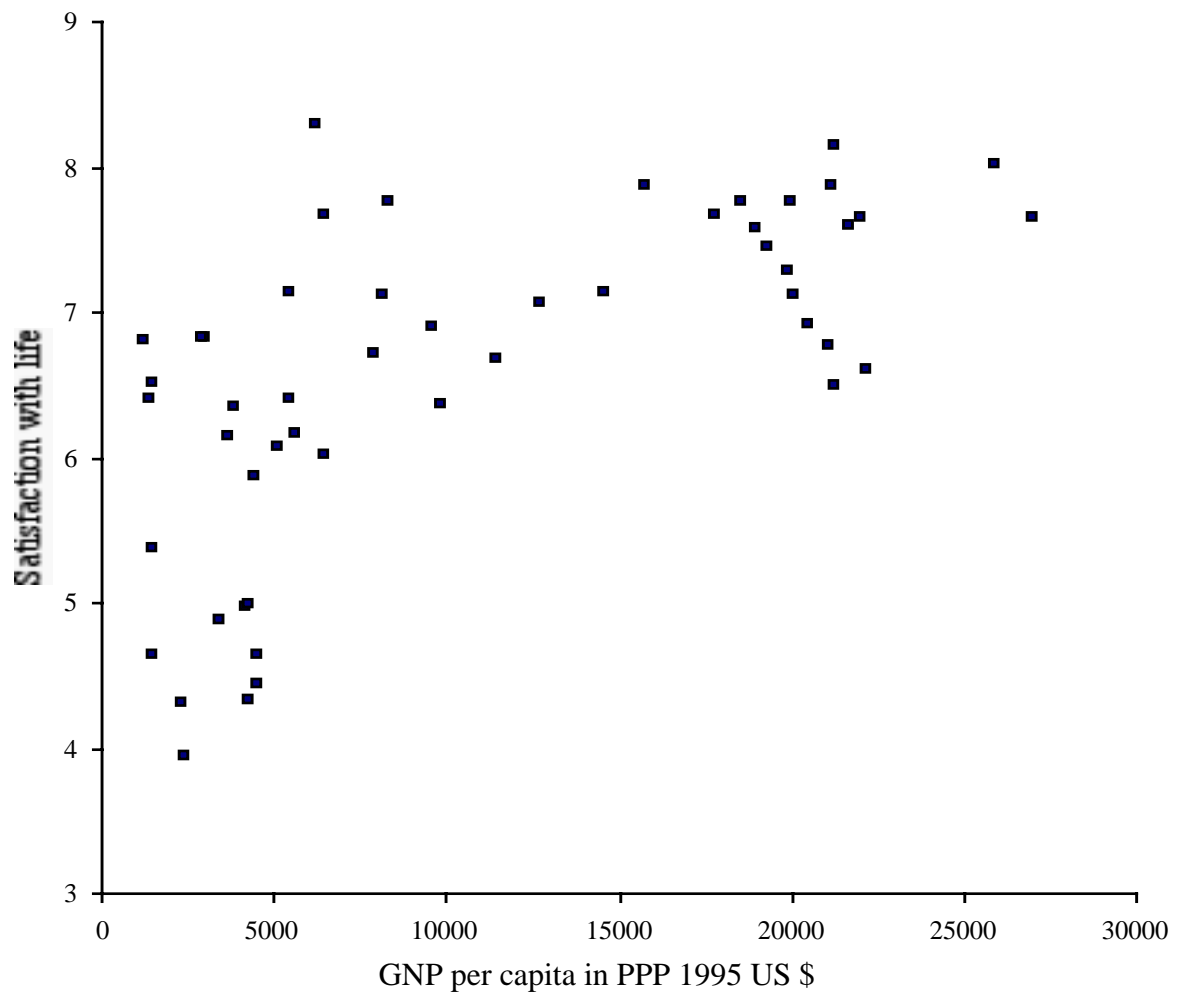
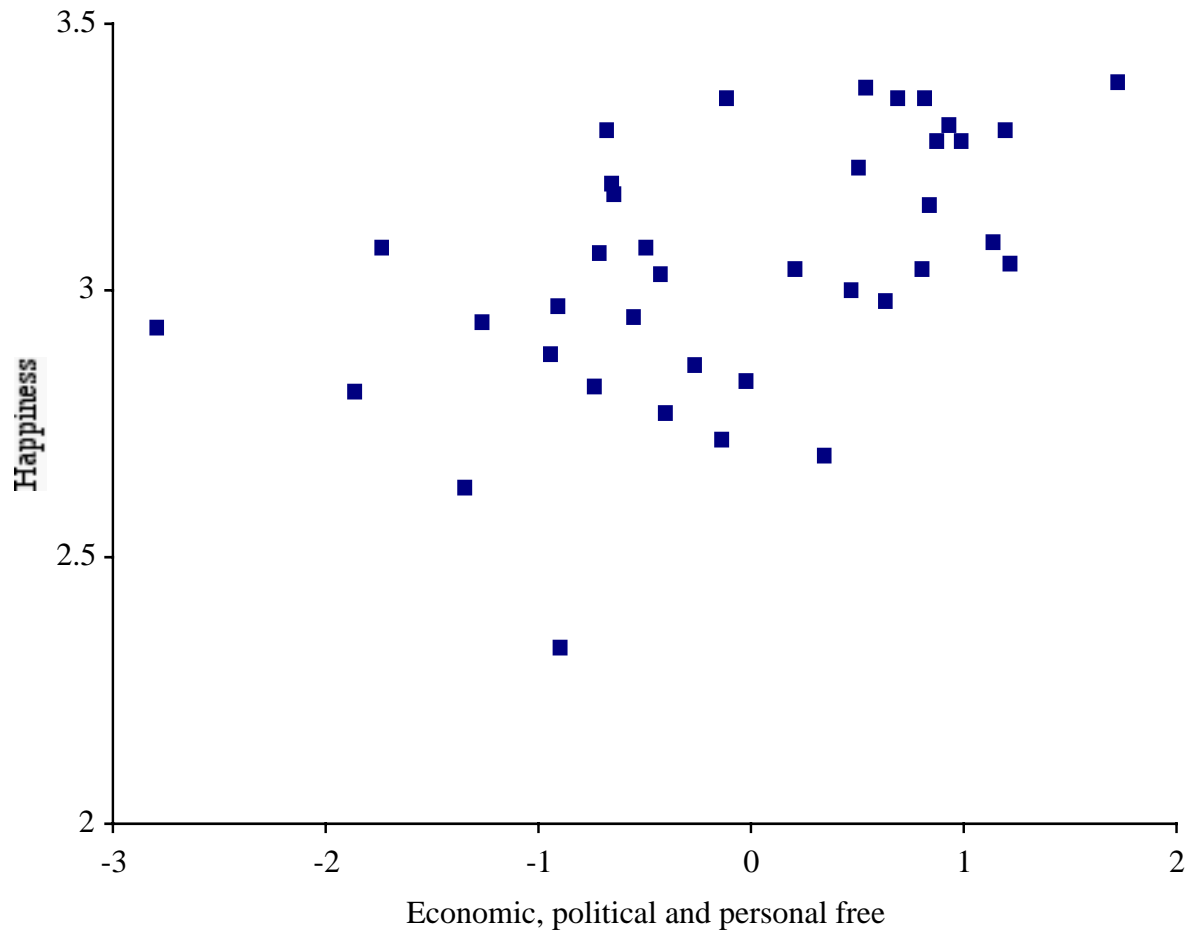


Figure 3. Happiness, Income and the Role of the Aspiration Level



*Figure 4. Life Satisfaction and Income Levels Across the World in the 1990s*

*Sources: World Values Survey 1990-1993/1995-1997 (ICPSR 2790) and World Development Report 1997.*



*Figure 5. Freedom and Happiness across Nations*

*Source: Veenhoven (2000), Appendix 1.*

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