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Abstract

Wellbeing has always eluded definition, and the elusive definition, in turn, has denuded the concept of an objective measure. Attempts at an objective measure have brought out two basic methodological alternatives. The first, objective, measure has come out as the famous Physical Quality of Life Index, developed by the sociologist Morris David Morris in the 1970s, based on the indicators of basic literacy, infant mortality, and life expectancy, and supplanted now by the Human Development Index. The second one, dealing with subjective wellbeing, focuses upon self-reported levels of happiness, pleasure, fulfillment etc. The present paper, in five sections, seeks to review the available objective measures of subjective wellbeing. In particular, section 2 discusses some of the important attempts at measuring wellbeing, especially objective wellbeing in terms of objective indicators. Section 3 details the subjective approach to wellbeing in terms of life satisfaction, represented by measures of global life-satisfaction, affect balance, average domain satisfaction and income. Section 4 presents a list of variables which are correlated with global reports of life satisfaction and happiness, such as smiling frequency, sociability and extraversion, sleep quality, high income, and high income rank in a reference group, active involvement in religion, self-reported health, age, sex, education, etc. Section 5 then reports on the surveys of subjective wellbeing, such as the World Values Survey, the General Social Survey, the Eurobarometer Survey, the Cantril Self-Anchoring Scale, and the Gallup World Poll, and seeks to interpret the scores received. The next section turns to a major concern of researchers in the field, which is whether self-report instruments are valid, whether there are cases wherein people might report that they are happy yet not truly experience high subjective well-being. The section also discusses briefly the recent attempts to measure individual welfare in terms of moment-to-moment affect in such approaches as Experience Sampling or the Day Reconstruction Method.

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1 Introduction

Wellbeing has always eluded definition, and the elusive definition, in turn, has denuded the concept of an objective measure. Wellbeing, in the general sense of the condition of faring well of an individual or group, is often represented in terms of the quality of life of an individual or group, including not only income, but also education, physical and psychic health, recreations, conducive environment, social belongingness, security, and so on. In contrast to this has earlier stood the concept of standard of living, based only on income, popularised by the mainstream economics in the name of basic needs approach. The different objective and subjective indicators that go into the composition of quality of life leave its definition and measurement elusive, despite its global recognition as a policy goal (Costanza, et al. 2008). Attempts at an objective measure have brought out two basic methodological alternatives. The first, objective, measure has come out as the famous Physical Quality of Life Index, developed by the sociologist Morris David Morris in the 1970s, based on the indicators of basic literacy, infant mortality, and life expectancy, and supplanted now by the Human Development Index. The second one, dealing with subjective wellbeing, focuses upon self-reported levels of happiness, pleasure, fulfillment etc. (Diener and Lucas 1999; and Easterlin 2003).

The present paper seeks to review the available objective measures of subjective wellbeing. What follows is presented in five sections. The next section discusses some of the important attempts at measuring wellbeing, especially objective wellbeing in terms of

objective indicators. Section 3 details the subjective approach to wellbeing in terms of life satisfaction, represented by measures of global life-satisfaction, affect balance, average domain satisfaction and income. Section 4 presents a list of variables which are correlated with global reports of life satisfaction and happiness, such as smiling frequency, sociability and extraversion, sleep quality, high income, and high income rank in a reference group, active involvement in religion, self-reported health, age, sex, education, etc. Section 5 then reports on the surveys of subjective wellbeing, such as the World Values Survey, the General Social Survey, the Eurobarometer Survey, the Cantril Self-Anchoring Scale, and the Gallup World Poll, and seeks to interpret the scores received. The next section turns to a major concern of researchers in the field, which is whether self-report instruments are valid, whether there are cases wherein people might report that they are happy yet not truly experience high subjective well-being. The section also discusses briefly the recent attempts to measure individual welfare in terms of moment-to-moment affect in such approaches as Experience Sampling or the Day Reconstruction Method.

2. Measuring Wellbeing

As Jean Drèze and Amartya Sen (1995) has critiqued, development economics has since its beginnings had “an overarching preoccupation with the growth of real income per capita” as the most common measure of aggregate human well-being. However, criticisms of national income as a metric for social welfare have a long history and are by no means confined to economists; for example, Robert F Kennedy (1925 – 1968; an American Democratic politician) in a speech given at the University of Kansas on March 18, 1968 said:¹

“If we believe that we, as Americans, are bound together by a common concern for each other, then an urgent national priority is upon us. We must begin to end the disgrace of this other America. And this is one of the great tasks of leadership for us, as individuals and citizens this year. But even if we act to erase material poverty, there is another greater task, it is to confront the poverty of satisfaction—purpose and dignity—that

¹ <http://www.jfklibrary.org/Research/Ready-Reference/RFK-Speeches/Remarks-of-Robert-F-Kennedy-at-the-University-of-Kansas-March-18-1968.aspx> (Accessed on 18 July 2012).

afflicts us all. Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things. Our Gross National Product, now, is over \$800 billion dollars a year, but that Gross National Product—if we judge the United States of America by that—that Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs that glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans.”

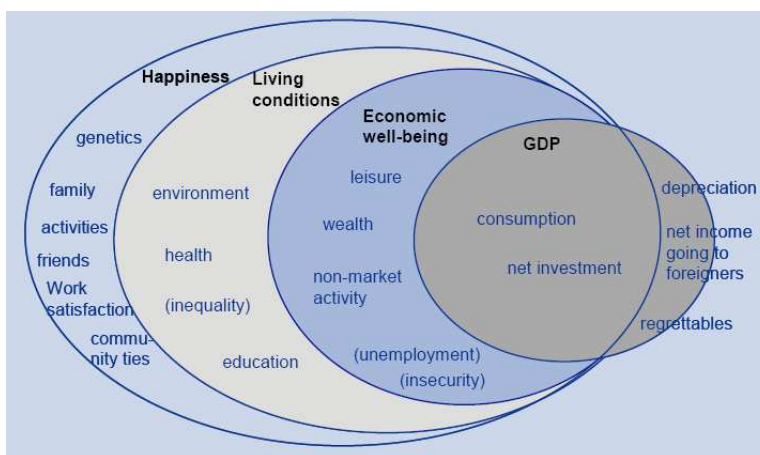
Gross national product (GNP) is the sum of all consumption, investment, and government spending by a country's nationals, whether within the national territory or not. In 1953, the United Nations published “A System of Statistical Tables” that gives clear, precise instructions for constructing national income accounts; these tables, with some modifications, are still the standard for national income accounts today (Waring 1988). Since the 1990s, GNP has been supplanted by GDP as the most common definition of national income (Ackerman et al. 1997). GDP measures all consumption, investment, and government spending within a country, plus exports minus imports, regardless of the citizenship of the consumers or investors. Many authors have noted conceptual problems with using GDP or GNP per capita as a measure of human well-being. Briefly, national income accounts:

- 1) only register monetary exchanges;
- 2) equate goods with commodities that are not “goods” but “bads,” like nuclear

- weapons, the production of which tends to lower social welfare;
- 3) count both addictions and cures, or “anti-bads,” like the costs of cleaning up petroleum spills;
 - 4) treat natural resources as free and limitless;
 - 5) place no value on leisure-time;
 - 6) ignore freedom and human rights; and
 - 7) ignore the distribution of income within the society (Hicks and Streeten 1979; UNDP 1990).

Figure 1 below illustrates the structure of the literature on well-being. The starting point is GDP, in a net concept, net of capital consumption, income going to foreigners and production of items that cause damage (e.g. pollution). What is then left of GDP (or a subset of it) is the starting point for measures of economic well-being, including non-market activity, the value of leisure and wealth minus the cost of unemployment and income insecurity. But well-being also has non-economic dimensions: good health and education, a clean environment and safe streets all contribute to individuals’ overall well-being. Finally, the ultimate goal of humans appears to be happiness (or life satisfaction).

Fig. 1: Happiness and Wellbeing



Note: Brackets indicate negative impact.

Source: *Deutsche Bank Research* September 8, 2006.

The capabilities theory of Sen and Nussbaum has branded down GDP per capita as an inadequate measure and proposed, under the aegis of the UNDP, the human development index and other indices as applied measures of social welfare. It should be noted that a number of alternative measures were developed and used in practice even much before that. For example, Nordhaus and Tobin (1972) developed the *Measure of Economic Welfare* (MEW) to better understand the relationship between economic growth and welfare. In the same year, the term 'gross national happiness' was coined by Bhutan's fourth Dragon King, Jigme Singye Wangchuck that led to the development of a sophisticated survey instrument to measure the population's general level of wellbeing. Then followed the Japanese Net National Welfare (NNW) indicator in 1973, the Economic Aspects of Welfare index (EAW) index of Zolatas in 1981, the Quality of Life Index (QLI), developed by Carol Estwing Ferrans and Marjorie Powers in 1984, Daly and Cobb (1989) Index of Sustainable Economic Welfare (ISEW), the Genuine Progress Indicator (GPI) developed by the US-based lobby group 'Redefining Progress', the Index of Economic Well-being (IEWB) developed by the Centre for the Study of Living Standards (Osberg and Sharpe 1998), the National Wellbeing Index of the Australian Centre on Quality of Life (since 2001), the Economic Living Standard Index (ELSI) of the government of New Zealand (since 2002), the Happy Planet Index (HPI), an index of human well-being and environmental impact, introduced by the New Economics Foundation (in 2006), its own Measure of Domestic Progress (MDP) for the UK, and the Legatum Prosperity Index, an annual ranking of 110 countries developed by the Legatum Institute, to name a few.

Methodologically, income has been used as a proxy instead of direct measures for opportunities and wellbeing because of the problems involved in measuring the private nature of experience and making interpersonal comparisons. However, it is argued that if people are not fully rational, their choices will not necessarily maximize their *experienced utility*, and increasing further their opportunities, the material standard of living, will not necessarily make them better off (Kahneman, 1994; Cass R. Sunstein and Richard Thaler, 2004). Richard Easterlin in a number of studies has examined the relationship between happiness and GDP both across countries and within individual countries over time and found a paradox of substantial real income growth in Western

countries over the last fifty years but without any corresponding rise in reported happiness levels: “*In all societies, more money for the individual typically means more individual happiness. However, raising the incomes of all does not increase the happiness of all.*” The happiness-income relation provides a classic example of the logical fallacy of composition—*what is true for the individual is not true for society as a whole.* The resolution of this paradox lies in the relative nature of welfare judgments. Individuals assess their material well-being, not in terms of the absolute amount of goods they have, but relative to a social norm of what goods they ought to have” (Easterlin 1973). Layard (1980) puts it more succinctly: “a basic finding of happiness surveys is that, though richer societies are not happier than poorer ones, within any society happiness and riches go together.” Similar studies have also since been conducted by psychologists (for example, Ed Diener, Marissa Diener, and Carol Diener 1995) and political scientists (for example, Ronald Inglehart 1990).

There are three different phenomena to look at when examining the connection between income and subjective well-being; rising GDP within a country, relative income within a country, and differences in GDP between countries (Easterlin 1973). The paradox is the seeming contradiction between the cross-section evidence on the relation between income and happiness and the time-series evidence. The cross-section evidence is that happiness and income are positively related. That is true on comparisons at a point of time among income groups within a country. It is also true of comparisons at a point in time of richer and poorer countries. The paradox is that when we look at what happens within a country over time, as income goes up, happiness does not rise the way one would expect it to on the basis of the cross-section.

More specifically, studies making comparisons between countries have come across a principle called the ‘diminishing marginal utility of income’ (DMUI); they have found not only a clear positive relationship between happiness and GNP per capita, but also a curvilinear pattern; which suggests that wealth is subject to a law of diminishing happiness returns (Veenhoven 1991). This implies that a ₹1,000 increase in real income becomes progressively smaller, the higher the initial level of income, having less of an impact on subjective well-being. Easterlin (1995) proved that the DMUI is true when comparing countries, but not when looking at rising gross domestic product within

countries.

It is argued that once an individual rises above a 'poverty line' or 'subsistence level', the main source of increased wellbeing is not income but other factors such as a good family life, friends, etc. (see, for example, Robert E. Lane 2000). This 'subsistence level' could be as low as US\$10,000 per annum (as reported in Bruno S. Frey and Alois Stutzer 2002b and Darrin M. McMahon 2006). All these arguments are interpreted to imply that at least for developed economies economic growth *per se* is of little importance and should, therefore, not be the primary goal of economic policy (Andrew J. Oswald 1997). Richard Layard (2005) goes as far as arguing that it should be happiness which is the explicit aim of government intervention.

Theoretically, utility is what is maximized in consistent choice, a representation of preferences which are simply choice-connected rankings of outcomes. According to the axiomatic approach, individuals' choices provide all the information required to infer the utility of outcomes. Welfare judgments can be made by resorting to the Pareto criterion and therefore no comparison of welfare levels among individuals is required. However, as already implied, in contexts of bounded rationality, individual choices fail to maximize experienced utility; direct measures of experienced utility become particularly relevant in such contexts. It is now questioned whether utility can generally be derived from observed choices. The same reservation applies to intertemporal choices when individuals suffer from problems of self-control. Thus the exclusive reliance on an objectivist approach in research is open to doubt, both theoretically and empirically. In any case, it restricts the possibility of understanding and influencing human well-being. Hence new ways are now pursued to approach individual welfare. Utility is again related to the original, Benthamite meaning of utility as the hedonic quality of experience, broadly construed to include satisfaction as well as pleasure. Moreover, advances in psychology and neuroscience suggest that experienced utility and wellbeing can be measured with some accuracy (Kahneman et al. 1999). Robust and interpersonally consistent relationships have been observed between subjective measures of experience and both specific measures of brain function and health outcomes. According to Lyubomirsky et al. (2005) a part of happiness appears to be genetically determined (around 50%), another part determined by happiness-relevant activities (40%) and the

remainder by circumstances (income, climate, environment, stable democracy etc.). Partly because of these findings, a large number of studies using subjective indicators of happiness and life satisfaction have come up in recent years.

In many situations the choice-based and the experience- or survey-based concept of utility coincide but there is also evidence indicating that they may systematically diverge in some situations. Empirically, utility based on judgments of satisfaction and pleasure can be captured by measures of subjective well-being. Note that subjective well-being is the umbrella term for different measures that can be distinguished along two dimensions. Regarding the first dimension, a common distinction is between cognition, i.e., the evaluative or judgmental component of wellbeing (usually assessed with life satisfaction), and affect, i.e., the pleasure-pain component of wellbeing (Diener 1984). With regard to affect, two independent components of positive and negative affect are differentiated. The second dimension distinguishes between measures that capture a person's level of subjective well-being and the duration in one rather than another mental state. Because life satisfaction is a relatively stable construct, duration measures usually refer to affect. A primary example of a duration measure is the U-index, which measures the proportion of time an individual spends in an unpleasant state (Kahneman and Kruger 2006).

3. Measures of Wellbeing

Measurement scales used in the 1930s and 1940s took the form of checklists that recorded behavioral and somatic symptoms of distress. Feelings of distress have long been considered a nonspecific indicator of mental health; because distress is often a stimulus to seek care, measures of distress represent a clinical orientation. However, the scales stop short of making diagnostic classifications; they offer general screens. They can also only indicate wellbeing in terms of the absence of distress, and so later gave way to an approach that asked directly about positive and negative feelings of wellbeing. The arguments in support of the symptom checklist held that it is more objective, and that it more adequately conceals the intent of the measurement; this was formerly deemed necessary because people were expected to be reticent about reporting their true feelings. Influenced by criticisms of the symptom checklist approach and by acceptance

in the 1950s of the potential accuracy of subjective reports, led a movement in the United States toward surveying feelings of happiness and emotional wellbeing. This trend also reflected the theme of positive mental health, a concept that may be traced back to the 1947 World Health Organization (WHO) conception of health. These measures recorded the affective responses to experience – the feeling states inspired by daily experience. They approached psychological well-being largely as a cognitive process in which people compare their perceptions of their current situation with their aspirations. This led to approaching wellbeing in terms of life satisfaction, represented here by measures such as the Life Satisfaction Index.

The literature in general identifies four measures of wellbeing: (1) Global life-satisfaction; (2) Affect balance; (3) Average domain satisfaction; and (4) Income.

1. Global life-satisfaction.

The first measure is the global 11-point rating of life-satisfaction (e.g., Schimmack et al., 2008). Often treated as a cardinal measure of utility, this is nearly exclusively used as a measure of wellbeing in most researches. The reasons for its popularity are its high face validity and the widespread use of life-satisfaction ratings in the wellbeing literature. Moreover, life-satisfaction ratings have shown impressive validity, and many potential biases have been shown to have relatively little effect on these ratings (Schimmack and Oishi, 2005). However, this evidence does not suggest that life-satisfaction judgments are the best measures of wellbeing, and some studies have revealed systematic biases in life-satisfaction judgments (Schimmack et al., 2008).

2. Affect balance.

The second measure is an affective measure of wellbeing. Theoretical considerations and pilot testing produced an affect balance measure based on four items. One item assesses positive experiences (happy), whereas the other three items assess negative experiences (angry, afraid, sad). The pilot study also suggested that subtracting the average of the three negative items from the positive item produced a good measure of affect balance. The measure is highly correlated with a longer 10-item measure and produces results that

are consistent with findings in the psychological literature (Schimmack / Schupp / Wagner, 2008).

3. Average domain satisfaction.

The third measure is an average of various domain satisfactions that are routinely assessed in researches (health, work, housework, leisure time, dwelling, family). Previous studies have shown high correlations between global life-satisfaction judgments and judgments of average domain satisfaction (Andrews and Whitey, 1976; Schimmack, Diener and Oishi, 2002; Schimmack and Oishi, 2005). This measure has two drawbacks. First, it does not weigh domains by their subjective importance. Second, the measure fails to capture aspects of wellbeing that are not covered by the domains included in the survey. A main advantage of this measure is that it relies less on respondents' ability to summarize and weigh all relevant aspects of their lives in response to a single question about satisfaction with life in general. Moreover, unweighted averages can be surprisingly robust estimates of weighted averages (Andrews and Whitey, 1976; Schimmack et al., 2002).

4. Income.

The fourth measure is income. Although psychologists do not regard income as a measure of wellbeing, it is an important indicator in (welfare) economics. Briefly, income is considered an important factor that influences wellbeing because it enhances people's opportunity to realize their preferences. However, economists are aware that income is an imperfect indicator of wellbeing for a number of reasons. One important reason is that not all preferences can be realized with money for ethical (e.g., it is illegal to pay a contract killer) or logical (it is impossible to buy a loyal friend or unconditional love) reasons. The second reason is that salaries could be negatively related to other aspects of a job that influence preference realization. Finally, income is an imperfect measure of spending and consumption, which are the more proximal predictors of wellbeing. Although the relation between income and wellbeing is not perfect, a wide variety of preferences can be realized better with more money (a better house, a shorter commute, fancier vacations, better schools for one's children, more leisure by paying for

help with chores, etc.). Not surprisingly, household income is consistently positively related with global happiness and life-satisfaction ratings (Diener et al., 1999). Across nations, income measured in GDP is a very strong predictor of average life-satisfaction ratings (Deaton, 2008).

4. Correlates of Wellbeing

What makes people happy? Although people may define happiness in their own terms, in general people mention similar things that make them happy (Easterlin 2002). Table 1 presents a list of variables which are correlated with global reports of life satisfaction and happiness. Some visible signs of cheerfulness, such as smiling, are positively associated with self-reported happiness. Surveys conducted in groups of countries have found that the factors that people mostly mention are everyday life issues, to some extent, that they control (Cantril 1965; Easterlin 2004; Frey and Stutzer 2002). Material conditions and consumption are most prominently mentioned in these surveys. A fulfilling family life, such as being married, having children and getting along with relatives is also an important part. Personal and family health is another determinant. Job satisfaction and personal character are also mentioned. Although international and domestic issues (politics, war, and others) are rarely mentioned as determinants for wellbeing, studies have found that political institutions have an influence on people's happiness (Frey and Stutzer 2002). Frey and Stutzer's organization (2002) divides the determinants of happiness into economic (i.e., income, unemployment, inflation and inequality) and non-economic (i.e., personality, socio-demographic and institutional factors). Layard (2005) highlights seven factors that have been shown to have the greatest influence on people's happiness: family relationships, financial situation, work, community and friends, health, personal freedom, and personal values.

The strong association between temperament and subjective wellbeing does not mean that events and circumstances are irrelevant to people's subjective wellbeing. In the first major review of happiness, Wilson (1967) shows that both personality and demographic factors are correlated with subjective wellbeing. According to him, the happy person is a "young, healthy, well-educated, well-paid, extroverted, optimistic,

Table 1
Correlates of Life Satisfaction and Happiness

Smiling frequency
Smiling with the eyes (“unfakeable smile”)
Ratings of one’s happiness made by friends
Frequent verbal expressions of positive emotions
Sociability and extraversion
Sleep quality
Happiness of close relatives
Self-reported health
High income, and high income rank in a reference group
Active involvement in religion
Recent positive changes of circumstances (increased income, marriage)

Sources: Diener and Suh (1999), Layard (2005) and Frey and Stutzer (2002).

worry-free, religious, married person with high self-esteem, job morale, modest aspirations, of either sex and of a wide range of intelligence” (Wilson 1967). Oreopoulos (2003) also finds that years of schooling are positively associated with satisfaction, and that this result holds up after using features of compulsory schooling laws as an instrumental variable for schooling to address the possibility of reverse causation (that is, the possibility that greater life satisfaction may cause people to complete more schooling). However, Campbell, Converse, and Rodgers (1976) find that demographic and economic variables such as age, education, and income do not account for much variance in reports of wellbeing in the context of Americans, echoing earlier findings by Bradburn (1969) and others.

In the past 30 years, researchers have systematically cataloged the various correlates of subjective wellbeing (Diener et al., 1999), with a number of replicable findings emerging: (a) factors such as age, sex, and income are related to subjective wellbeing; (b) these effects are usually small; and (c) most people are moderately happy, and thus, demographic-economic factors tend to distinguish between people who are moderately

happy and those who are very happy (Diener and Diener, 1996).

Income, for example, is consistently related to subjective wellbeing in both within-nation (e.g., Diener et al., 1993; Haring, Stock, and Okun, 1984) and between-nation analyses (e.g., Diener et al., 1993); but at both the individual and the national level, income change over time has little net effect on subjective wellbeing (Diener et al., 1993; Diener and Suh, 1998). Goals and expectations must be taken into account to understand the relation between income and subjective wellbeing; the benefits of a rising income are offset if one's material desires increase even faster than wealth.

Several studies, on the other hand, have found that rank in the income distribution or in one's peer group is more important than the level of income (Clark and Oswald, 1996; Ferrer-i-Carbonell, 2005; Luttmer, 2005). Rayo and Becker (2005) propose a theory in which peer comparisons and adaptation to circumstances are an integral part of the "happiness function" as a result of an evolutionary process. Some studies also suggest that wealth has a smaller impact on subjective wellbeing (SWB) than people generally think, even though higher incomes do correlate substantially with life satisfaction reports (Aknin, Norton and Dunn 2009). In this study Aknin and his colleagues asked the participants from across the income spectrum to report their own happiness and to predict the happiness of others and themselves at different income levels. In one study, predicted happiness ranged between 2.4 and 7.9 and actual happiness ranged between 5.2 and 7.7. In the second study, predicted happiness ranged between 15 and 80 and actual happiness ranged between 50 and 80. These findings show that people believe that money does more for happiness than it really does (ibid.).

Similarly, there are substantial positive associations between health and SWB so that people who rate their general health as 'good' or 'excellent' tend to experience better SWB compared with those who rate their health as 'fair' or 'poor'. A meta-analysis has found that self-ratings of general health are more strongly related to SWB than physician ratings of health (Okun, Stock, Haring, and Witter, 1984). The relationship between health and SWB may be bidirectional. There is evidence that good subjective wellbeing contributes to better health, and that interventions that are successful in improving subjective well-being can have beneficial effects on aspects of health (Diener and Chan,

1984). For example, meditation and relaxation training have been found to increase positive affect and to reduce blood pressure. However, the effect of specific types of subjective wellbeing is not entirely clear. For example, how durable the effects of mood and emotions on health are remains unclear. Whether some types of subjective wellbeing predict health independently of others is also unclear (*ibid.*).

However, Wilson (1967) argues that researchers must be careful about the conceptualization and measurement of independent variables, and concludes that though physical health, for example, is correlated with subjective well-being, recent findings qualify this conclusion: The relation depends on whether self-report or objective ratings of health are assessed. Although self-reported health correlates positively with subjective well-being (e.g., Okun, et al., 1984), the correlation is weak when objective health ratings are examined (Watten, Vassend, Myhrer, Syversen, 1997). Subjective wellbeing influences the subjective perception of health, and this inflates the correlation between subjective wellbeing and subjective health. It appears that the way people perceive the world is much more important to happiness than objective circumstances.

Age and sex are related to subjective wellbeing, but these effects are small, and depend on the component of subjective wellbeing being measured. For example, in an international sample of 40 nations, Diener and Suh (1998) find that although pleasant affect declines across age cohorts, life satisfaction and unpleasant affect show little change. In two separate international samples consisting of approximately 40 nations each, Lucas and Gohm (2000) find that sex differences in subjective wellbeing are small (only about one fifth of a standard deviation difference), with women reporting greater unpleasant and pleasant affect (though only significant differences in unpleasant affect are replicated across both international samples). Based on these results, one could not simply say that men are happier than women or that the young are happier than the old. The conclusion depends on the component of subjective wellbeing that is measured. Diener et al. (1999) argue that if theory in this area is to progress, researchers must study the separable components of subjective wellbeing – ‘happiness’ is not a single thing.

Other demographic characteristics such as marital status and religious activity are also positively correlated with subjective wellbeing; but the effects of marriage can differ for men and women, and the effects of religious activity may depend on the specific type of religiosity being assessed. Thus, the answer to whether particular demographic factors increase subjective wellbeing is likely dependent on people's values and goals, personality, and culture.

In any event, measures of temperament and personality typically account for much more of the variance of reported life satisfaction than do life circumstances. For example, measures of psychological depression (such as acknowledging difficulty finding the enthusiasm to get things done) are highly correlated with life satisfaction. Apparently, a person's subjective evaluation of his or her own wellbeing is to a significant extent a personality trait. Identical twins separated immediately after birth, for example, show the same concordance on happiness as on other traits for which a genetic basis is well established, like height (Lykken and Tellegen, 1996).

Variables that are associated with low life satisfaction and happiness include: recent negative changes of circumstances; chronic pain; and unemployment, especially if only the individual was laid off. Gender is uncorrelated with life satisfaction and happiness. The effects of age are complex – the lowest life satisfaction is apparently experienced by those who have teenagers at home, and reported satisfaction improves thereafter.

This pattern of correlations has led Diener (1984) to conclude that the judgment of life satisfaction is made by combining an imperfect assessment of the balance of affect (that is, positive and negative feelings or emotions) in one's life with an assessment of how well one's life measures up to aspirations and goals. Since the components of affect and life assessment are potentially distinct, it is necessary to establish, for each correlate of life satisfaction, whether the correlation is higher for one of the constituents of the composite measure than for the other. The same question can be raised both with respect to possible causes and to possible consequences of well-being. To answer such questions, of course, it is necessary to have a separate measure of people's affect over time.

5. Happiness Surveys

The questions most frequently asked in research using surveys of subjective wellbeing elicit reports of global life satisfaction or happiness. In the World Values Survey (WVS), for example, respondents in 81 countries are asked:

“All things considered, how satisfied are you with your life as a whole these days”? Or

“Taking all things together, would you say you are: Very happy, Rather happy, Not very happy, or Not at all happy.”²

The General Social Survey (GSS) similarly asks Americans:

“Taken all together, how would you say things are these days? Would you say that you are very happy, pretty happy, or not too happy?”

The Eurobarometer Survey asks:

“On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead”? And

“Taking all things together, how would you say things are these days – would you say you’re very happy, fairly happy, or not too happy these days?”³

The Cantril Self-Anchoring Scale, developed by Hadley Cantril, an American researcher of public opinion (1906–1969) asks:

“Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top.

² www.worldvaluessurvey.org

³ www.gesis.org/en/data_service/eurobarometer/standard_eb_trend/indexframe_trend.htm

The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you.

On which step of the ladder would you say you personally feel you stand at this time? (ladder-present)

On which step do you think you will stand about five years from now? (ladder-future)”

Similarly, the Gallup World Poll conducted in 130 countries has elaborated an index of wellbeing based on the following questions:

“Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?

Just your best guess, on which step do you think you will stand on in the future, say 5 years from now?

Were you treated with respect all day yesterday?

Did you smile or laugh a lot yesterday?

Did you learn or do something interesting yesterday?

Did you experience the following feelings during a lot of the day yesterday?”⁴

Different measures of wellbeing provide different perspectives on the process by which

⁴ www.gallup.com/poll/102259/Denmark-New-Zealand-Canada-Rank-Highest-WellBeing.aspx

respondents reflect on or experience their lives. The Cantril Scale measures wellbeing closer to the end of the continuum representing judgments of life or life evaluation (Diener, Kahneman, Tov, and Arora, 2009). Research conducted across countries around the world (Deaton, 2008) indicates substantial correlations between the Cantril Scale and income. This contrasts with measures of feelings or affect which appear to be more closely correlated with variables such as social time (Harter and Arora, 2008).

One distinct value of the Cantril Scale is the fact that a respondent can self-anchor themselves based on their perspective. While every respondent will have their own unique perspective, the patterns in the data suggest the scale can be meaningfully grouped into at least three distinct categories as follows:

Thriving – wellbeing that is strong, consistent, and progressing. These respondents have positive views of their present life situation (7+) and have positive views of the next five years (8+). They report significantly fewer health problems, fewer sick days, less worry, stress, sadness, anger, and more happiness, enjoyment, interest, and respect.

Struggling – wellbeing that is moderate or inconsistent. These respondents have moderate views of their present life situation or moderate or negative views of their future. They are either struggling in the present, or expect to struggle in the future. They report more daily stress and worry about money than the *thriving* respondents, and more than double the amount of sick days. They are more likely to smoke, and are less likely to eat healthy.

Suffering – wellbeing that is at high risk. These respondents have poor ratings of their current life situation (4 and below) and negative views of the next five years (4 and below). They are more likely to report lacking the basics of food and shelter, more likely to have physical pain, a lot of stress, worry, sadness, and anger. They have less access to health insurance and care, and more than double the disease burden, in comparison to the *thriving* respondents.

Early survey instruments usually posed a single question about people's happiness or life satisfaction. Psychometric evaluations of these simple scales show that they possess a

degree of validity. For example, Andrews and Withey (1976) find that global questions about people's overall evaluation of their lives yielded scores that converged well with one another. As the field has matured, more multi-item scales have appeared, with greater reliability and validity than the single-item instruments. Lucas, Diener, and Suh (1996) demonstrate that multi-item life satisfaction, pleasant affect, and unpleasant affect scales form factors that are separable from each other, as well as from other constructs such as self-esteem. A number of happiness, affect, and life satisfaction measures are now available (see Andrews and Robinson, 1992, for a review).

6. Validity

A major concern of researchers in the field is whether self-report instruments are valid. After all, people might report that they are happy yet not truly experience high subjective well-being. When participants report on any aspect of global subjective wellbeing, they must construct a judgment about their wellbeing. This constructed judgment may not faithfully correspond to the average mood or level of satisfaction experienced across many different moments. Thus, estimates of happiness and reports of affect over time are likely to be influenced by a person's current mood, his or her beliefs about happiness, and the ease of retrieving positive and negative information.

Hence some researchers, equating individual welfare with moment-to-moment affect, argue that individual welfare might be best measured by such approaches as Experience Sampling or the Day Reconstruction Method. The former (Experience Sampling Method) collects information on individuals' actual experiences in real time in their natural environments, and the Day Reconstruction Method asks people to reflect on how satisfied they felt at various times during the day; it asks them to stop at certain times and make notes of their experience in real time (right then, not later; right there, not elsewhere), as developed by Larson and Csikszentmihalyi (1983) (see Stone et al., 1999; Kahneman et al. 2004). At the momentary level, researchers now examine people's reports of moods, pleasures, pains, and satisfactions recorded online by using palm-sized computers to signal people randomly. When signaled, respondents complete a survey of their feelings at that moment. Kahneman (1999) suggests that these types of data offer

the most accurate estimate of subjective wellbeing because they are less distorted by artifacts and biases.

While Thomas and Diener (1990) find only a modest match between people's reports of momentary moods and their recall of those moods, Sandvik, Diener, and Seidlitz (1993) find that the self-report measures converge with other types of assessment, including expert ratings based on interviews with respondents, experience sampling measures in which feelings are reported at random moments in everyday life, participants' memory for positive versus negative events in their lives, the reports of family and friends, and smiling. Despite the positive psychometric qualities of global subjective well-being measures, however, a multi-method battery to assess subjective wellbeing is recommended when this is possible. Additional assessment devices based on memory, informant reports, and experience sampling are likely to supplement the information obtained from global measures and guard against response artifacts, and in some cases the alternative measures may yield different answers about who is the happiest (e.g., Oishi, 2000).

Appendix 1: Measurement of Subjective Wellbeing –

Web based resources

1. Australian Centre on Quality of Life

<http://acqol.deakin.edu.au/instruments/instrument.php>

Index of a few hundred quality of life and well-being related scales. This site gives a brief description of the scale, along with key references to scale development and relevant psychometric research.

2. Positive psychology Centre, University of Pennsylvania

<http://www.ppc.sas.upenn.edu/ppquestionnaires.htm>

Useful measures linked from this site include:

Satisfaction with Life Scale (SWLS)

Psychological Well-being Scales

Subjective Happiness Scale (SHS)

3. Authentic Happiness web-site

<http://www.authentichappiness.sas.upenn.edu>

Scales are available for self-completion, but key references and copy right information is given. Scales include those tapping into emotion, engagement, meaning and life satisfaction. Useful measures available at this site include:

PANAS (Positive and Negative Affect Schedule)

CES-D

Fordyce Emotions Questionnaire

Satisfaction with Life Scale

Approaches to Happiness Scale

Some widely used recent measures

Mental health

Positive mental health

Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

<http://www.healthscotland.com/documents/1467.aspx>

Still under development and psychometric testing.

Currently 14 positively worded items, each with 5 response categories.

Covers most aspects of positive mental health (positive thoughts and feelings);

Currently in the literature, including both hedonic and eudaimonic perspectives

Mental health scales, used within SWB literature

GHQ-12

<http://www.webpoll.org/psych/GHQ12.htm>

Originally consisted of 60 questions about mild somatic and psychological symptoms, later condensed to 30- and 12-item questionnaires.

Patient Health Questionnaire (PHQ-9) Quick Depression scale

<http://www.patient.co.uk/showdoc/40025272/>

Center for Epidemiologic Studies Depression Scale (CES-D)

<http://www.chcr.brown.edu/pcoc/cesdscale.pdf>

20-item scale, 4 response options based on frequency of experiencing specified emotional states during the last week.

Scored from 0 to 60.

Measures of affect

PANAS (Positive and Negative Affect Schedule).

10 positive affects (interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive, and active) and 10 negative affects (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid).

Participants are asked to rate items on a scale from 1 to 5.

Summed scores for each scale: 6-30.

Bradburn's Affect Balance scale

10-item rating scale containing five statements reflecting positive feelings and five statements reflecting negative feelings.

Respondents are asked by an interviewer to focus on feelings during the past few weeks and indicate a positive (yes) or negative (no) response to each of the scale items.

Positive affect is obtained by summing the 5 positive questions (scale of 0 to 5) and negative affect by summing the negative questions. Affect Balance Scale is scored by subtracting the negative from the positive and adding a constant of 5 to avoid negative values.

Experience Sampling Method (ESM)

<http://www.ncbi.nlm.nih.gov/pubmed/3655778>

Subjects carry a beeper device that signals randomly. Each time the beeper activates, subjects fill out a survey that typically includes questions asking what the subject was doing, who they were with, and how the subject was feeling at the time of the alarm.

Day Reconstruction Method (Kahneman and Kreuger)

http://sitemaker.umich.edu/norbert.schwarz/files/drm_documentation_july_2004.pdf

A hybrid approach in which respondents first revive memories of the previous day by constructing a diary consisting of a sequence of episodes. Then they describe each episode by answering questions about the situation and about the feelings that they experienced, as in experience sampling.

Life satisfaction

Satisfaction with Life Scale (SWLS)

<http://www.ppc.sas.upenn.edu/lifesatisfactionsscale.pdf>

5 item questionnaire, each with 7 response scales.

This scale has been extended to incorporate a time dimension by the Temporal Satisfaction with Life Scale (TSWLS).

Global Quality of Life Assessment.

Domain satisfactions and domain-weighted life satisfaction.

Australian Personal Well-Being Index (PWI)

http://acqol.deakin.edu.au/instruments/wellbeing_index.htm

Includes a school and pre-school version.

Needs based, flourishing and multi-dimensional measures of well-being

Basic Psychological Needs Scale (Deci & Ryan)

http://www.psych.rochester.edu/SDT/measures/needs_scl.html

Family of scales, one that addresses needs satisfaction in general in ones life, others than address needs satisfaction in specific domains (e.g. work, interpersonal).

Original scale had 21 items concerning needs for competence, autonomy and relatedness.

Some studies work with only 9 items (3 for each dimension).

Approaches to Happiness (ATH) Scale

<http://www.authentic happiness.sas.upenn.edu>

Life of meaning (6 questions), life of pleasure (6 questions), life of engagement (6 questions).

Each with the response scale: 1 "Very much unlike me" to 5 "Very much like me".

Scoring for each dimension is the average of the 6 questions.

WHO-QOL (100 & BREF)

http://www.who.int/substance_abuse/research_tools/whoqolbref/en/

WHO-QOL aimed to be an international cross-culturally comparable quality of life assessment instrument.

WHOQOL-BREF instrument comprises 26 items, which measure the following domains: physical health, psychological health, social relationships, and environment.

The average of each domain is taken, giving a profile of 4 separate domain scores Psychological Well-Being Scales (Ryff's).

Six dimensions: autonomy, positive relations with others, purpose in life, self-acceptance, environmental mastery and personal growth.

The original scale had 20 items contained within each of the 6 dimensions. This has been reduced to 14 items per dimension, and more recently 3 items per dimension.

CASP-19

<http://www.ncbi.nlm.nih.gov/pubmed/12775399>

Quality of life index for older people, developed from a needs based perspective
19 item Likert scaled index.

Questions on 4 domains: Control, Autonomy, Self-realisation and Pleasure.

Sum of all items (0 to 57)

European Social Survey. Module on well-being

http://www.cambridgewellbeing.org/Files/Well-being-Module_Jun06.pdf

A wide range of questions on feelings and functionings

Health-utility measures

EQ-5D

<http://www.euroqol.org/>

EQ-5D is a standardised instrument for use as a measure of health outcome.

The EQ-5D consists of 243 distinct health states across five dimensions (mobility, self-care, usual activities, pain/discomfort and anxiety/depression), each with three levels (no problem, moderate problem and severe problem).

The EQ-5D is often administered with a Visual Analogue Scale (VAS) or 'feeling thermometer' requiring a direction valuation of the individual's health on a scale from worst health imaginable to best imaginable.

Utility values for each state have been elicited from respondents using the EQ-5D VAS technique in 8 European countries, and the TTO method has been used to elicit values for 5 countries Denmark, Germany, Japan, Spain and the UK.

The scoring algorithm, or social tariff, for the UK is based on preferences of a

random sample of non-institutionalised adults throughout the UK (Dolan, 1997), using the Time Trade Off (TTO) method. EuroQol values are anchored by '1' representing full health and '0' representing the state 'dead' with states 'worse than death' bounded by '-1'.

SF-6D

<http://www.shef.ac.uk/scharr/sections/heds/mvh/sf-6d>

The SF-6D is a classification for describing health derived from a selection of SF-36 items.

The SF-6D is composed of six multi-level dimensions. Any patient who completes the SF-36 or the SF-12 can be uniquely classified according to the SF-6D

The SF-6D describes 18,000 health states in total.

The SF-6D comes with a set of preference weights obtained from a sample of the general population using the recognised valuation technique of standard gamble. Members of the general population were asked to value a selection of health states from which a model has been estimated to predict all the health states described by the SF-6D

QWB

<http://www.outcomes-trust.org/instruments.htm#QWB>

An interviewer-administered general health related quality of life questionnaire measuring symptoms, mobility, physical activity and social activity.

Scores can be translated into utility values for quality of adjusted life years. A set of values for the QWB were derived using a VAS approach (anchored at '0' for death/worst possible and '100' for optimum health) among a random sample of 435 English-speaking residents in San Diego, California (Sieber *et al.*, 2004)

HUI2 and HUI3

<http://www.shef.ac.uk/scharr/sections/heds/mvh/hui2>

<http://www.healthutilities.com/hui3.htm>

The Health Utilities Index (HUI) has two versions, HUI2 and HUI3 (Feeny *et al.*, 1995).

HUI3 defines 24,000 health states using seven attributes (sensation, mobility, emotion, cognition, self-care, pain and fertility) with three to five levels per attribute.

HUI2 defines 960,000 health states using eight attributes (vision, hearing, speech, ambulation, dexterity, emotion, cognition and pain) with five to six levels per attribute.

Both the HUI2 and HUI3 can be administered with a 15 item questionnaire.

The HUI3 scoring function is based on preference measurements obtained from a small random sample of the general population in Hamilton, Ontario, Canada, using Standard Gamble (SG) estimated from transformed VAS.

UK valuation of the HUI2: <http://www.shef.ac.uk/scharr/sections/heds/mvh/hui2>

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