

Income's Differential Influence on Judgments of Life Versus Affective Well-Being

Ed Diener, Daniel Kahneman, Raksha Arora, James Harter, and William Tov

Abstract Findings are presented indicating that measures of subjective well-being can be ordered along a dimension varying from evaluative judgments of life at one end to experienced affect at the other. A debate in recent decades has focused on whether increasing income raises the experience of well-being. We found that judgment measures are more strongly associated with income and with the long-term changes of national income. Measures of affect showed lower correlations with income in cross-sectional analyses, as well as lower associations with long-term rising income. Measures of concepts such as “Happiness” and “Life Satisfaction” appear to be saturated with varying mixtures of judgment and affect, and this is reflected in the degree to which they correlate with income. The results indicate that measures of well-being fall along one dimension with different factors influencing scores at each end. Both types of well-being, judgment and affect, show very similar patterns of declining marginal utility with increasing income.

Introduction

Scholars have long pondered what leads to a happy life, and behavioral scientists have recently turned their attention to this question. However, in the past decade, attention has been drawn to the fact that “happiness” is not a single entity and can be divided into elements that differ from each other. Kahneman (1999) suggested that global judgments such as an evaluation of “life satisfaction” computed and reported at a single moment in time are quite different than the pleasantness of people’s emotional lives, especially when it is sampled on-line over time rather than reported

E. Diener (✉)

Department of Psychology, University of Illinois, Champaign, IL 61820, USA
e-mail: eddiener@uiuc.edu

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globally. In support of this distinction, Lucas, Diener, and Suh (1996) found that various forms of well-being are empirically distinct and that their separability survives even when different measurement methods are employed. Thus, it is no longer satisfactory to inquire about “happiness.” Rather, the various types of “happiness” should be individually analyzed and compared.

The major distinction that Kahneman drew was between global evaluative judgments and what he termed “objective happiness,” the latter comprising people’s feelings of pleasure and displeasure summated over time. One way to think of the distinction is to imagine that in global judgments, people step back and think of certain factors that they deem to be important and salient at the time of the judgment, whereas affect is determined in a less consciously controlled way as people react over time in their natural settings to ongoing events.

We suggest that the various self-report measures of subjective well-being are saturated to varying degrees with judgment and affect. Although no well-being measure is ever totally free of either of these components, it is plausible that a measure of “life satisfaction” might be more heavily weighted with judgment, whereas reports of “happiness” might be more saturated with affect. In the present study, we were fortunate to have two measures that seemed a priori to be close to the two opposite ends of the judgment–affect dimension: Cantril’s Ladder (1965) and a report of daily affect. We analyzed two additional measures, life satisfaction and happiness, which we predicted would fall between the Ladder and affect measures on the judgment–affect dimension.

The goal of the study was to determine whether the judgment and affect measures performed differently and to identify the mix of the two processes reflected in specific measures. We pursued this goal by examining the intercorrelations among the measures at both the individual and national levels, as well as their correlations with external variables such as income. We also examined the distributions of the well-being measures and how the measures changed over time in response to changes in income. In this way, we sought to explore the characteristics of affect versus judgment measures of well-being.

In a classic 1974 article, Richard Easterlin asked whether economic growth makes people happier. The “Easterlin Paradox” consists of the puzzling fact that individual differences in income are usually correlated with differences in reports of well-being, but as national incomes have risen, there has often not been substantial growth in reported well-being. However, much debate has ensued in recent years about whether nations have, in fact, risen in average well-being over time in response to increasing income.

Hagerty and Veenhoven (2003), Stevenson and Wolfers (2008), and Inglehart, Foa, Peterson, and Welzel (2008) all claimed that, on the whole, the evidence suggests that there has been increasing happiness in many nations, and that it is associated with rising income. An examination of the data reported in these articles, however, indicates much variability in the pattern of findings. For example, in a response to Hagerty and Veenhoven, Easterlin (2005) pointed out that many nations, in fact, grew in income over time and did not increase in reported well-being. For instance, Easterlin presented reports of happiness over the decades in the United

States, which were essentially flat, and contrasted this trend with the substantial economic growth the country experienced during the same period of time. He concluded that across nations there are “quite disparate trends in happiness, suggesting that factors other than growth in income are responsible for the differential trends in happiness” (p. 429). In response, Veenhoven and Hagerty (2006) suggest that, on average, happiness increases occurred in nations where income rose the most. Stevenson and Wolfers (2008) argue that increasing income led to increases in happiness, but they also point to the substantial statistical uncertainty of some of their conclusions.

Inglehart et al. (2008) suggested that life satisfaction might be more influenced by economic conditions than is happiness, and this suggestion forms the starting point for our income analyses. We examine the possibility that various forms of well-being vary in their responsiveness to income change. Specifically, it could be that judgments and affective well-being vary with respect to how much they are influenced by economic growth. We analyze the association of four well-being variables that we propose vary along the judgment versus affect dimension with several economic variables—income, income change, and the ownership of modern conveniences such as television. Thus, we explore whether some of the past differences in conclusions about whether “happiness” has risen with income are due to the differential association of different types of well-being with income and which measures the researchers analyze.

We were fortunate to possess a representative sample of virtually the entire earth’s adult population. Unlike many previous studies, the Gallup World Poll, on which we heavily relied, includes many less developed nations and a representative sample of rural residents outside of the major metropolitan areas. We were also fortunate that the survey included both a global judgment measure and an assessment of emotions experienced “yesterday.” One issue with past research is that the wording of questions varies in different surveys conducted over the decades. Thus, we focused on surveys that used virtually identical wording and exactly the same response formats.

In our analyses, we relied heavily on the analyses of national data, not individual data, for several reasons. First, we have longitudinal data over time for nations and this forms a keystone in our analyses. Second, the Easterlin claim about income change is that in the aggregate at the societal level income increases do influence well-being because as the income of everyone rises, the standard for adequate income also rises at the same rate. Thus, our analyses focus on the nation-level, but we also examine individual data in the Gallup World Poll to determine whether the same dimensionality can be uncovered in the well-being measures, and whether the predictors are the same as at the nation-level.

In sum, we had several goals in the current study. First, we analyzed measures of well-being to determine whether they are separable, reflecting an underlying dimension related to global evaluative judgments versus the experience of affect. Second, we examined income and other predictors to determine whether they are most related to the judgment or affective ends of the well-being dimension, and whether income changes relate more to judgment or to affect. We also determined whether

the distributions of the various measures of well-being were similar, and conformed to E. Diener and C. Diener's (1995) maxim that "most people are happy." Finally, we examined whether declining marginal utility of income shows the same pattern across all forms of well-being.

Methods

The Gallup Organization initiated its World Poll in 2005, and the first wave conducted from late 2005 to 2006 includes representative surveys of 132 societies representing over 95% of the world's population. The poll features a consistent set of standard questions in all surveys and uses nationwide samples (with the exception of Angola, Myanmar and Cuba where only urban populations were surveyed; and Afghanistan where there were only representative provinces).

Two sampling procedures were used in the World Poll: random-digit-dial (RDD) telephone surveys and face-to-face interviews. The RDD design was used in countries where the vast majority of the population had access to land line telephones. In all other countries, face-to-face surveys were conducted with clusters of households (obtained from census tract listings) serving as the basis for random sampling. The typical World Poll survey in a country consists of approximately 1,000 respondents. The total sample size for the present study was 141,741.

Wave 2 of the survey presented an additional well-being question on life satisfaction that was not included in the first wave. Thus, we analyzed the association of the well-being measures using also Wave 2, which included 84,225 respondents in 78 nations. Approximately 48,000 respondents were presented with the life satisfaction question.

From the survey, we employed several measures of well-being. Cantril asked respondents to evaluate their life (Ladder of Life) on a scale from 0 (*worst possible*) to 10 (*best possible*). Other measures assessed the recent experience of emotions, namely, positive feelings (enjoyment and smiling/laughter) and negative feelings (sadness, anger, worry, and depression). To reduce the extent of bias in recalling past experiences, respondents reported ("yes" or "no") whether they experienced these feelings during much of the previous day. At the individual level, we averaged Enjoyment and Smiling and subtracted the average of the four negative emotions to create an Affect Balance score. For each nation, we averaged the individual scores to create nation-level scores. The additional measure of well-being in Wave 2 on Life Satisfaction asked respondents how satisfied they were with their lives on a scale ranging from 0 (*Dissatisfied*) to 10 (*Satisfied*).

The Gallup World Poll queried respondents about their ownership of modern household conveniences, and we averaged five of these to create a composite Conveniences score: running water, electricity, telephone, television, and computer. In addition, we analyzed a question that asked how free subjects were in deciding how to spend their time. The question was answered by a dichotomous "yes" or "no" response, and asked: "Were you able to choose how you spent your time all day yesterday?"

In addition to the Gallup World Poll, we also obtained well-being measures for nations from Veenhoven's (2008) World Database on Happiness. We searched for those nations where the same 4-point happiness question was asked at two points in time separated by more than five years. When the scale had been administered more than two times, we used the first and last administrations. The question asked: "Taking all things together, would you say you are: 4—Very happy, 3—Quite happy, 2—Not very happy, or 1—Not at all happy," or small variants of these wordings. We also obtained Time 1 scores for nations where Cantril's Ladder had been administered previously and used the oldest date when the 0–10 response format was employed.

For life satisfaction at Time 1, we used the oldest existing survey in each nation where the same 0–10 format was used as in the Gallup World Poll. However, in order to increase our number of nations for life satisfaction, we also used instances where the response format was 1–10, as long as the earlier and later scales were available using the same response scale and were separated by more than five years. The Dominican Republic was dropped from the analyses of the Ladder scale because its score was an extreme outlier, far lower than any score ever reported, including very poor nations in the midst of turmoil. The score was so low that we suspect that it is an error, or a temporary response to some acute disaster.

Income scores were obtained from the Penn World Tables for years prior to 2005 (Heston, Summers, & Aten, 2006). Real GDP per capita in constant prices, chain series was used. For the years 2005–2007, we obtained income reports from the World Development Indicators database (World Bank, 2005–2007), and purchasing power parity in international dollars was used. Although the two methods yield some differences in estimated income, the differences are extremely small compared to the differences between nations, and the two types of income correlate almost perfectly.

Results

We hypothesized that measures that are more heavily weighted toward global life judgments will correlate more strongly with income and changes in income, whereas measures that more strongly reflect momentary affect will less strongly reflect income. In terms of widely used measures, we predicted that Cantril's Ladder will most heavily correlate with income, that affect will do so less strongly, and that measures that mix both elements such as global reports of "happiness" and "life satisfaction" will do so at intermediate levels. Most analyses were conducted at the level of nations, and not individuals, because it is at this level that the Easterlin debate focuses, and it is at this level that we obtain the most reliable measurements.

Our general plan is first to use the large Wave 1 of the Gallup World Poll to examine how well-being measures are related to one another in order to understand the nature of what each of them is assessing. We next determine how they relate to predictors such as income and satisfaction with standard of living. We also present the distributions of the various measures, as this too suggests a disjuncture between the judgment and affect measures. In addition, we analyze the patterns of declining

marginal utility for the various measures to determine whether they are similar or different. Finally, we examine how changes in income over decades are associated with changes in the various well-being measures.

Cross-Sectional Analyses

Our analyses begin with cross-sectional correlations among the well-being measures themselves in order to explore their relationships with each other. We correlated the nation-level well-being averages for four measures of well-being at the most recent time of the surveys. As can be seen in Table 1, the correlations suggest a pattern of variables moving from the Ladder of Life Satisfaction, to Happiness, to Affect Balance. The Ladder and Affect Balance are least related, and the variables that are immediately adjacent to one another are most associated. The correlations suggest that the Ladder and Affect Balance are least related, and that the other two well-being variables are intermediate in their composition. The individual level correlations mirror this pattern.

We further explored the composition of Life Satisfaction and Happiness by predicting them simultaneously with both the Ladder and Affect Balance scores of nations. Life Satisfaction was predicted most strongly by the Ladder Score (Beta = 0.61, $p < 0.01$), although Affect Balance also significantly added to the prediction (Beta = 0.28, $p < 0.01$). In contrast, Happiness was most strongly predicted by Affect Balance (Beta 0.54, $p < 0.01$) with the Ladder predicting it positively, but not significantly so (Beta = 0.23). Thus, Life Satisfaction is more strongly saturated with judgment, but also includes an affective influence, whereas Happiness is more strongly reflective of affect.

We next analyzed the correlations of the four well-being measures with three predictors, and these associations are shown in Table 2. As can be seen, the Ladder correlated significantly more highly with income and conveniences, and lower with choosing how to spend one's time, than the other Subjective Well-Being (SWB)

Table 1 Intercorrelations of well-being measures

Well-being variables	Ladder	Life satisfaction	Happiness
<i>Across Nations</i>			
Life Satisfaction	0.74 N = 59		
Happiness	0.62 N = 48	0.71 N = 37	
Affect Balance	0.53 N = 127	0.56 N = 58	0.71 N = 48
<i>Across Individuals</i>			
Life Satisfaction	0.54 N = 47,966		
Affect Balance	0.26 N = 78,238	0.31 N = 45,746	

Table 2 Nation-level correlates of measures of well-being

Well-being variables	Income per capita	Choose how to spend time	Possession of modern conveniences
Ladder Score			
Time 1	0.82 a N = 18		
Time 2	0.83 c N = 119	0.33 a N = 128	0.80 a N = 128
Life Satisfaction			
Time 1	0.66 b N = 38		
Time 2	0.58 d N = 62	0.51 b N = 59	0.46 b N = 59
Happiness			
Time 1	0.35 b N = 48		
Time 2	0.34 de N = 52	0.54 b N = 48	0.16 bc N = 48
Affect Balance (Time 1 only)	0.31 e N = 118	0.57 b N = 127	0.16 c N = 127

Note. Correlations for the same time period in the same column which do not share a subscript letter in common differ by $p < 0.05$ or less.

variables. In some cases, the correlations for Life Satisfaction with the predictors differed from those for Happiness and Affect Balance, and in some cases not. Affect Balance and Happiness never differed significantly. The pattern of correlations clearly indicates that income and conveniences are more strongly associated with judgment forms of SWB, and that feelings tend to be more associated with the freedom to choose how to spend one's time.

Table 3 presents the correlations at the individual level between the well-being variables and the same three predictors as shown in Table 3. Because of the very large sample sizes, all with over 45,000 respondents, all correlations shown in the table differ significantly from one another by $p < 0.01$. The correlations with the material variables and well-being, as well as feelings of autonomy and well-being,

Table 3 Individual-level correlates of well-being

Well-being variables	Income per capita	Choose how to spend time	Possession of modern conveniences
Ladder Score	0.38 N = 76,895	0.10 N = 81,534	0.42 N = 79,193
Life Satisfaction	0.34 N = 36,898	0.16 N = 47,424	0.27 N = 47,962
Affect Balance	0.14 N = 73,622	0.33 N = 78,191	0.12 N = 75,401

Note. All correlations are significantly different from zero at $p < 0.01$.

all closely mirror the pattern of associations found at the national level. The correlations are lower than those found with the nation-level variables, probably because there is random variation, and error of measurement and momentary mood effects tend to get averaged out when analyzing nation-level means. However, once again the two material variables were most strongly related to the Ladder, related least to Affect Balance, and at an intermediate level with Life Satisfaction.

A set of regression analyses in which Life Satisfaction was predicted by the other two variables at the individual level indicated that it was most closely associated with the Ladder, but that Affect Balance added significantly to its prediction as well (all p 's < 0.01). When the Ladder was entered first as a predictor, it accounted for 29% of the variance, and Affect Balance added 3% more to the prediction when it was added. By contrast, when Affect Balance was entered first, it explained 10% of the variance in Life Satisfaction, but the Ladder added 22% additional variance. Thus, at the individual level, Life Satisfaction was both a judgment and affect variable, but much more strongly saturated with judgment.

The distributions of the well-being variables are also revealing. E. Diener and C. Diener (1995) hypothesized that most people are happy unless they are in dire circumstances, owing to the evolutionary advantages of being in a generally positive mood, and Cacioppo, Gardner, and Berntson (2002) similarly suggested that there is a "positivity offset" such that people tend to feel slightly pleasant in neutral situations. However, our findings indicate that this applies to affect, but not to judgments. Each of the four scales we employed has a neutral point above which is positive and below which is negative. For the Ladder and Life Satisfaction scales, above 5 indicates satisfaction or being closer to one's ideal life; and below 5 indicates dissatisfaction or being closer to the worst possible life one can imagine. For Affect Balance, above neutral means that there are more individuals who frequently experience pleasant than unpleasant emotions; and below 0 means the opposite. Finally, for "Happiness," the top two categories signify being happy and the bottom two signify being unhappy.

The distributions of scores for the four well-being measures are shown in Fig. 1. As can be seen, the distribution of the scores for the ladder is centered more closely around the midpoint, the neutral point, of the scale than the scores are for the other three measures. The percentage of nations below neutral for each measure at Time 2 was: Ladder—42%; Life Satisfaction—5%; Happiness—4%; Affect Balance—1%. Clearly, the distribution of scores around neutrality is dramatically different for the Ladder than for the other three scales.

People seem to be able to judge their lives to be closer to the worst possible than best possible lives they can imagine for themselves, and yet still feel generally positive in terms of their affect. Thus, conclusions about whether most nations are happy depend on whether we are discussing well-being judgments or affect. For judgments, many nations are not happy; but, for affect, almost all nations are above neutral in happiness. It appears that the affective influence on the happiness and life satisfaction scores tend to stabilize them in positive territory, at least at the level of nations, unless conditions have strongly deteriorated, whereas people are much more likely to step back from their lives and make a judgment that is more negative.

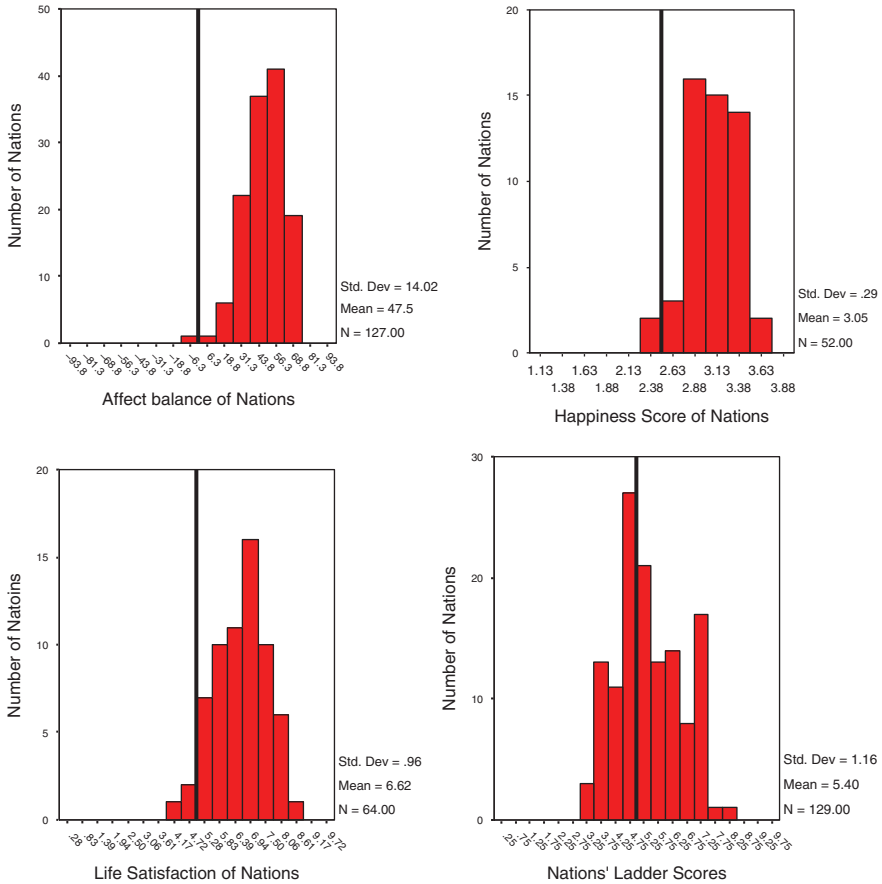


Fig. 1 Distributions of scores for four types of well-being measures

What of declining marginal utility, the tendency for money to have less and less impact as one obtains more and more of it? Is declining marginal utility similar for judgments and for affect balance? It might be, for example, that both types of well-being show declining marginal utility but have a different inflection point after which income makes less difference. In Fig. 2, we present the values of the two types of well-being for six levels of income. We standardized the measures of well-being in order to show them on the same scale. As can be seen, well-being increases rapidly as people rise out of poverty, but then improves more slowly after that. There is a very steep rise in well-being from dire poverty to about 20,000 dollars a year, and then a slow trend upwards, and then another slowing of the rise after about 50,000 dollars per year. Notably, the two lines are virtually identical, so close that they can barely be distinguished in the figure. Although affect is less influenced by income than are judgments of life, the association with income appears to decrease at the same rate for both.

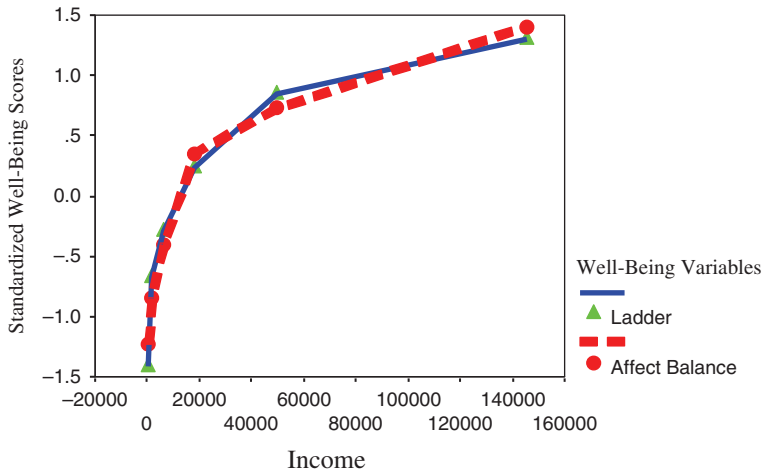


Fig. 2 Declining marginal utility

Longitudinal Analyses

We examined the correlations of each of the well-being measures with income and income change over longer periods of time greater than five years. In Table 4, we present the means for income and the well-being variables at the two points in time, as well as the average year of the surveys. As can be seen, on average the surveys were many years apart with intervals of 36, 21, and 19 years for three well-being measures. Furthermore, there were extremely large increases in income over those periods of time. Thus, if rising income has a long-term effect on well-being, it should be apparent during the periods of time we analyzed.

Table 4 Means and standard deviations of key variables for both waves

Wave & variables	Ladder	Life satisfaction	Happiness
Wave 1 Well-Being	5.58 (1.04)	6.68 (1.15)	3.01 (.28)
Wave 2 Well-Being	6.31 (1.01)	6.91 (.89)	3.08 (.28)
Wave 1 Year	1970 (10.1)	1983 (10.7)	1984 (13.6)
Wave 2 Year	2006 –	2004 (4.4)	2003 (2.9)
Wave 1 PPP/capita	8,148 (6,475)	10,702 (5,478)	11,187 (7,385)
Wave 2 PPP/capita	19,938 (13,756)	22,114 (14,039)	20,332 (12,498)
Number of Nations at Both Waves	18	32	48

We correlated the change in log per capita income with the change in well-being and found associations of: Ladder, $r = 0.56$, $N = 18$, $p < 0.05$; Life Satisfaction, $r = 0.33$, $N = 32$, $p < 0.10$; Happiness, $r = 0.24$, $N = 0.48$, $p < 0.10$. How large and consistent were the changes in well-being? Because income more than doubled, there ought to be a recognizable overall increase in well-being, not simply a correlation with changes in income if income influences well-being. For the Ladder and Happiness, there were significant national increases in well-being (p 's < 0.01 and 0.05 , respectively) during the periods we covered, whereas for Life Satisfaction, the difference was not significant. When the scale score changes are expressed in terms of the between-nation standard deviations in scores, well-being changed by the following amount: Ladder = 0.71 SD units; Life Satisfaction = 0.23 SD units; and Happiness = 0.25 SD units. As percentages of the total possible range of the scales, the differences between Times 1 and 2 were: Ladder = 7%; Life Satisfaction = 2%; and Happiness = 2%.

Discussion

Our findings indicate that measures of well-being vary along a dimension that is anchored by judgments about one's life at one end and by affect at the other. Selected measures can be placed on this continuum based on the relative amount they are influenced by the two types of subjective well-being. Cantril's Ladder of Life appears to reflect a judgment about one's life, whereas reports of emotions during the previous day stand at the other end of the dimension. Life Satisfaction is between the two anchors but appears to be closer to the Ladder, strongly reflecting a judgment but more heavily influenced by affect than is the Ladder. Reports of "Happiness" also fall toward the middle of the dimension but closer to the affective end than Life Satisfaction. Interestingly, on all of the measures that are influenced by affect most respondents score above the neutral point of the scale. By contrast, the Ladder is more evenly distributed around the neutral midpoint of the scale. Only for declining marginal utility do we see a very similar form for judgment and affect.

Not only do the measures differ in their relations with each other, but they also differ in their strength of associations with variables such as income and the ownership of modern conveniences. The Ladder was most strongly correlated with these material variables, and the Affect measure was least strongly associated with them. Life Satisfaction was significantly more strongly related to the material variables than Affect Balance, but significantly less strongly related to them than the Ladder. The strength of associations for Happiness and the material variables was significantly weaker than the Ladder correlations, but it did not differ significantly from either Life Satisfaction or Affect Balance. In contrast to income and the ownership of modern conveniences, feelings of autonomy in everyday life were more strongly associated with affect and less strongly associated with the Ladder. Thus, the pattern of correlations with the predictors confirms the dimensional ordering derived from the intercorrelations of the well-being variables with each other. The correlations

suggest that material prosperity is strongly associated with judgments of life but much less correlated with affective well-being.

An examination of changes in well-being and income over time again supports the separability of the measures along the judgment–affect dimension. In terms of long-term changes in income, the Ladder showed a clear association, whereas the strength of this association for happiness and life satisfaction was more mixed across analyses and weaker. In terms of short-term changes in income, after controlling for income level, the Ladder showed the least association. By contrast, the more affective measures continued to show a significant inverse relation to short-term income change even after controlling for the level of income.

Is Easterlin correct, or his critics? The data on income and well-being are intricate, and like a Rorschach, one can see what one wants. On the one hand, life judgments are strongly related to income and have risen with income, and this is a pattern that is consistent across most nations. On the other hand, affect has benefited much less from long-term rising income. Similarly, one can point to the increases in well-being that have occurred in most nations, or one can point to the substantial number of nations that have declined in well-being even as their incomes have risen. Clearly, there is a more complex pattern than simply an input–output system in which income causes well-being in a one-to-one way. Other factors in societies must be considered, such as social trust and urbanization; psychological factors such as rising aspirations also play a role.

Easterlin was correct in his claim that rising incomes do not inevitably increase subjective well-being; and the critics are correct in their claim that rising incomes have often been associated with some increases in well-being. The challenge now is to understand when higher income leads to a higher well-being and when it does not.

In conclusion, we found that the judgment contained in Cantril's Ladder was much more associated with income and income changes than was the more purely affective measures. Thus, it is no longer productive simply to talk about income and general "happiness"; well-being must be parsed into the judgmental versus affective components. Whether income causes an increase in well-being appears to depend heavily on what type of well-being is being discussed. In future research, judgments of life and affect ought to be distinguished in all research on well-being, even though in some instances they will produce similar conclusions.

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