

E X C H A N G E

International Happiness: A New View on the Measure of Performance

by David G. Blanchflower and Andrew J. Oswald

Executive Overview

This paper describes the findings from a new, and intrinsically interdisciplinary, literature on happiness and well-being. The paper focuses on international evidence. We report the patterns in modern data, discuss what has been persuasively established and what has not, and suggest paths for future research. Looking ahead, our instinct is that this social science research avenue will gradually merge with a related literature—from the medical, epidemiological, and biological sciences—on biomarkers and health. Nevertheless, we expect that intellectual convergence to happen slowly.

“Measures of both objective and subjective well-being provide key information about people’s quality of life. Statistical offices should incorporate questions to capture people’s life evaluations, hedonic experiences and priorities.”

—Stiglitz et al. (2009, p. 16)

Standard indices of a country’s prosperity—such as longevity, human height, the incidence of disease, the suicide rate, and the level of gross domestic product (GDP)—are well known and widely collected. Governments throughout the developed nations, and in many developing nations, regularly publish such numbers. Yet if they are to do their job effectively, politicians and policy makers arguably have to go beyond this. They must understand, and measure, the happiness and mental health of their country’s citizens, because it is overall human well-being (not simply a collection of its constituent elements) that is of interest.

The last few decades have seen a body of researchers attempt to rise to the difficult challenge of how to study “happiness” in a systematic, empirical

way. These scholars come from a range of disciplines, including psychology, economics, epidemiology, medicine, statistics, sociology, political science, and management science. Although their methodological approaches differ in detail (moreover, researchers in one discipline are not always good at citing related work in the journals of the other disciplines, so different subfields sometimes lay claim to having discovered results first), a common methodology has begun to emerge.

This article describes the core findings from the recent happiness literature.¹ One approach for a

¹ Contributions from psychologists, economists, and other investigators include Easterlin (1974), Clark and Oswald (1994), Diener et al. (1995a,b), Ng (1997), Oswald (1997), Judge et al. (1998), Veenhoven (1999), Argyle (2001), Di Tella (2001), Radcliff (2001), Frey and Stutzer (2002), Easterlin (2003), Huppert and Whittington (2003), Wolfers (2003), Blanchflower and Oswald (2004, 2008a), Kahneman et al. (2004), Van Praag and Ferrer-I-Carbonell (2004), Graham (2005), Luttmer (2005), Steptoe, Wardle, and Marmot (2005), Gilbert (2006), Welsch (2006), Grant, Christianson, and Price (2007), Dolan, Peasgood, and White (2008), Napier and Jost (2008), Powdthavee (2008), Stevenson and Wolfers (2008), Graham (2009), Daly and Wilson (2009), Devoe and Pfeffer (2009), Luechinger (2009), Daly et al. (2010), Judge, Ilies, and Dimotakis (2010), Pittau, Zelli, and Gelman (2010), Powdthavee (2010), Pfeffer (2010), Stone et al. (2010), Bell and Blanchflower (2010), and Oswald and Wu (in press). A historian’s perspective is provided by Offer (2006).

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paper of this kind would be a survey article—listing which researchers said what, and the year they said it. Here we take a different pedagogical approach that we hope will be helpful for a starting reader who knows little about the field. Specifically, we take the latest international data and, using the methodological insights from the literature, build up from first principles to try to show readers how conclusions are reached in this field. More particularly, we touch on three themes: First, we review the literature about what has been found in happiness research that seems true in almost all countries and is of particular interest to social scientists and management scholars; this includes articles that outline which countries come out high, and which low, in happiness and well-being. We go on to review what is wrong with existing approaches and why the use of national happiness is an improvement over GDP, and we conclude with a discussion of how the field can do better and where the research is likely to go.

The paper also discusses, and is motivated in part by, the recent Stiglitz Commission's report on the measurement of economic and social progress in a modern economy.² A list of the recommendations from the Stiglitz Commission is given in the appendix.

A Brief Background to Happiness Research

Most researchers begin from the idea that inside a human being there is some happiness or utility function of general form:

$$\text{Happiness} = f(\text{age, gender, income, education, marital status, diet, other personal characteristics, region characteristics, country characteristics})$$

They then draw on quantitative methods that are formally similar to those employed in medical statistics, econometrics, and quantitative management science. Authors typically take a random sample of

the population, use multiple-regression techniques, use some form of well-being as the dependent variable, and calculate the size of the coefficients within so-called “happiness equations” (Powdthavee 2010 is a valuable nontechnical guide to this). At a formal level, this method is like the approach of an epidemiologist who wishes to understand the myriad influences on a person's chance of good or bad life outcomes, such as falling ill with cancer. In both literatures—epidemiology research and happiness research—the outcome of such research is a linear or logistic equation in which factors such as a person's age, gender, diet, and smoking are shown statistically to matter.

Is happiness actually measurable? It is likely that debates about the right interpretation of subjective measures will continue throughout the 21st century and beyond. But in social science they currently do so in a less strident way than decades earlier. Frey and Stutzer (2002) summarized ways to validate happiness data. Krueger and Schkade (2008) showed that people's reported well-being numbers are reasonably stable through time. And Oswald and Wu (2010) demonstrated that across the United States there is a strong match between subjective and objective well-being.³

What is noticeable about this line of modern social science research is not merely the discoveries that have been made but the attention that such work has garnered outside academia. People are interested in the topic. Hundreds of recent newspaper articles have appeared discussing happiness research. There are a number of popular “science of happiness” books. Politicians on the left and right have shown interest, and a recent commission led by Nobel Prize-winning economists Joseph Stiglitz and Amartya Sen produced a long report making recommendations on how, looking to the future of the industrialized nations, we might move away from simple GDP measurement.

² This report, which may not yet be known to many management scholars and social scientists, was published in 2009 and can be downloaded from www.stiglitz-sen-fitoussi.fr. The commission was set up by French President Nicolas Sarkozy.

³ For the extreme skeptic who is doubtful of all subjective statements in settings where humans may not wish to admit to shortcomings, one demonstration of the perhaps surprising accuracy of subjective assessments is given in Oswald (in press), who reports that data on subjective height (*I am very tall/very short*) are closely correlated with an objective feet-and-inches measure.

Our own work in this field began in the early 1990s. At the time we had a connection with the London School of Economics, where our colleague Andrew E. Clark did early (and important) work within the same broad area. At that time, there was no interest from our colleagues in economics departments around the world, and at one (in)famous open conference in 1993 in London the three of us made up a fair proportion of the occupants of a large room of empty chairs. At that juncture virtually all economists viewed such work as misguided. One long paper on well-being over time in Britain and the United States took a decade to get published. There was precedent for all of this: The seminal work of Richard Easterlin (1974, and later) had, years before, met with even less success.

Easterlin, whom we were to meet in the late 1990s, had in the 1970s demonstrated that happiness in the United States did not seem to be rising through time with GDP growth.⁴ He argued—and still does—that the likely reason was that humans are fundamentally creatures of comparison, so that when they see everyone around them becoming richer at the same time as they themselves do the net result is a kind of generalized neutrality. We go from having one Ford to having three Lexuses, and nobody is happier. Many researchers believe in some version of this idea—that people's well-being or "utility" (as economists tend to call it) depends on relative factors. Such an approach goes back to, for example, Duesenberry's relative-income hypothesis (1949). Recent writings on comparisons include Hagerty (2000), Luttmer (2005), Fliessbach et al. (2007), Clark and Senik (2010), Daly, Oswald, Wilson, and Wu (2010), and Layard (2010). In its latest incarnation, some authors have begun to argue empirically that ordinal rank may be what matters to humans (Brown, Gardner, Oswald, and Qian, 2008, reviewed the evidence).

⁴ A related modern literature finds evidence that mental strain may actually be worsening through time. Relevant work includes Sacker and Wiggins (2002), Green and Tsitsianis (2005), Hodiamont et al. (2005), Green (2006), Oswald and Powdthavee (2007), and Oswald (in press). Research that looks at epidemiological measures of psychological well-being such as so-called GHQ scores includes Clark and Oswald (1994), Goldberg et al. (1997), and Hu et al. (2007).

Despite economists' slowness to follow in Easterlin's footsteps, today this field is among the fastest growing within economics and social science. Clark, Frijters, and Shields (2008) provided a recent overview that is accessible to non-specialists.

An Introduction to the Empirical Findings

To get a feel for some of the discoveries in the happiness literature, consider Table 1, which uses the most up-to-date data available to us. It takes data on 48,000 individuals from the General Social Survey (GSS) of the United States, which

Table 1
Happiness Equations for the United States, 1972–2008

	(1)	(2)
Age	-.0053 (5.57)	-.0135 (8.60)
Age ²	.00007 (7.67)	.00016 (9.51)
Male	-.0497 (7.91)	-.0620 (8.08)
Black	-.1312 (15.43)	-.1362 (12.45)
Other non-white	-.0456 (3.19)	-.0400 (2.35)
Time trend	-.0002 (0.84)	-.0017 (4.02)
# of years of schooling	.0170 (17.66)	.0126 (9.36)
Work part-time	-.0282 (2.89)	-.0051 (0.45)
Temp not working	-.0775 (3.99)	-.0584 (2.79)
Unemployed	-.2343 (14.10)	-.2164 (11.05)
Retired	-.0043 (0.39)	.0548 (1.96)
School	.0335 (1.96)	.1223 (4.29)
Home worker	-.0384 (4.28)	-.0179 (0.92)
Married	.2322 (27.51)	.2227 (22.30)
Widowed	-.0924 (6.94)	-.1017 (4.76)
Divorced	-.0750 (6.73)	-.0563 (4.29)
Separated	-.1430 (8.62)	-.1035 (5.04)
Parents divorced @16	-.0436 (4.97)	-.0353 (3.37)
Annual income		.00246 (9.72)
Constant	2.0228	2.2125
Adjusted R ²	.0820	.0783
N	48,189	28,107

These are two happiness regressions—each is to be read vertically—in which the dependent variable is people's answer to the question *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?* Answers are coded cardinally from 3 down to 1.

Excluded categories: white, single, and working full-time.

Here, and in later tables, t-statistics are in parentheses.

Mean (SD) of dependent variable = 2.195 (0.635).

The annual income coefficient has here been scaled up by a factor of 1,000.

Source: General Social Surveys (GSS).

since 1972 has been asking an annual random sample of Americans this question: “Taken all together, how would you say things are these days: Would you say that you are very happy [approximately 32% give this answer], pretty happy [56%], or not too happy [12%]?” So the vast majority of respondents are quite happy or very happy, and the distribution of answers is fairly consistent with those of other nations, as shown in the literature.

Table 1 presents a regression equation that is typical of the kind estimated in the happiness literature. It has as its dependent variable a cardinal version of people’s answers, where “very happy” is coded 3, “pretty happy” is coded 2, and “not too happy” is coded 1. The mean level of American happiness—given this elementary cardinal numbering—is 2.2, with a standard deviation of 0.6. Statistically, this approach is not ideal; an ordinal estimator, such as ordered logistic regression, is preferable. Why? Because there are no good grounds to believe that people’s happiness answers obey the rules of a cardinal scale. However, a long line of research papers has found that it makes little difference whether a cardinal or ordinal estimator is used, and the former method has the attractive feature that it is straightforward for readers to read off the size of effects in a regression equation. For ease of exposition in a review paper such as this, we use cardinal dependent variables throughout.

In Table 1, we find that American happiness:

1. Is U-shaped through a person’s lifespan (because Age enters, at the top of Table 1, with a quadratic shape).
2. Is higher among those who are women (because Male enters with a negative coefficient of -0.0497).
3. Is higher among whites, the highly educated, full-time workers, those who are married, and those earning a high income.
4. Is lower among those not in these categories or who are unemployed or temporarily not working; those who work at home; people who are widowed, divorced, and separated; and those who had parents who divorced before they were 16 years old.

These judgments are from a pooled cross-section analysis, so they describe associations in the data. We should be cautious before reading causality into such patterns, but perhaps not so cautious that we turn away from all such inferences. The famous and vital finding that smoking causes cancer was first observed as an elementary pattern in cross-sectional data. Moreover, those (often non-quantitative) researchers who are keen to remind us all that correlation is not causation should, in turn, occasionally be reminded that the discovery of a correlation is typically one necessary part of a proof of causation. Causation first needs correlation.

If the happiness equations for the United States are examined across a variety of variables, it can be seen for age and age-squared coefficients that Americans’ happiness reaches its low point at, on average, around 40 years of age. The coefficient of -0.0497 on Male means that on average a woman reports a happiness level approximately 0.05 points higher than a man (on a scale that runs from 1.0 to 3.0). Similarly, reading down the first column of Table 1, black Americans report lower happiness than whites by approximately 0.13 points. A time trend enters negatively but, in this first column, in a way that is insignificantly different from zero (the *t*-statistic is only 0.83). Years of schooling enters strongly positively: The more educated people are, the more they report a high score on a happiness scale. Each extra year of education in the United States is associated with 0.017 extra happiness points, so the difference, for example, between completing high school and completing a college degree is slightly greater than 0.06 happiness points.

One of the (strikingly) large effects can be seen in how unemployment affects happiness. Joblessness is associated here with a huge amount of unhappiness. Specifically, a coefficient of -0.2343 is found (with a *t*-statistic of 14.1), which is almost twice that associated with the black dummy variable or five times that associated with being male. The other particularly large coefficient is on marriage, of 0.2322. Hence, married Americans are happier, *ceteris paribus*, by approximately one quarter of a happiness point on the 1–3 scale. Being separated is large and negative; it

has a coefficient slightly exceeding -0.14 . A parental-divorce variable, which measures whether the respondent at the age of 16 lived with only one parent because his or her parents were divorced, also enters negatively and with a tightly defined standard error; its coefficient in the first column of Table 1 is -0.0436 . It could be argued that American adults—filling out their happiness forms many years after the event—may carry a small psychological scar from parental divorce that occurred decades earlier. Again, this pattern may or may not be one of cause and effect.

Are richer Americans happier than poorer ones? Most economists, and many ordinary citizens, would think the answer is obvious: People strive after money so it must make them happier. Historically, there has been a huge debate on this topic in psychology journals. Some textbooks—we deliberately omit citations on this—have wrongly told generations of psychology undergraduates that money is not a source of happiness. Insofar as regression equations can settle the question, the answer is unambiguous: Yes, money buys happiness. Every extra thousand dollars of income is associated, according to column 2 of Table 1, with 0.00246 extra units of happiness. Hence, for example, \$100,000 a year is the equivalent of 0.246 happiness points on the standardized GSS scale, which is slightly greater in size than the positive happiness value of marriage or the negative value of unemployment.

Although it looks strange at first sight, in principle these methods allow researchers to work out the deep determinants of human well-being: They allow us to put a price tag on the happiness value of a host of life's influences. This is what the research literature has done. Much remains to be learned. But such valuations are now entering use in the ecological economics literature for the study of the environment, and may be close to being tested in the courts (where for a long time the value of emotional damages has been assigned by judges and juries using intuition rather than formal techniques). We return to this later in the paper.

On the basis of Table 1, it might be believed that the explanatory power of happiness equations is low. First, the R-squared values in Table 1 are

below 0.1, which implies that less than 10% of the variance of reported happiness has been explained by the independent variables. Second, when compared to the size of one standard deviation of Americans' reported happiness (which is 0.635), the coefficients on most of these variables look small. But such an attitude may be the wrong one. A more appropriate test is on the size and statistical significance of the coefficients on the independent variables. Again an epidemiological example may be appropriate: The R-squared on equations predicting who gets any disease is very small, but since the 1950s it has been usefully realized that diet and smoking enter with substantial and statistically significant coefficients.

A fundamental question for both social science and public policy is whether the quality of life in a country like the United States is improving through the years. What do the data say? They do not paint a particularly encouraging picture.

If the data are examined for the mean level of happiness in the United States nearly every year between 1972 and 2008 (the most recent year for which data are available), Americans' happiness is not rising. In the early to mid-1970s, one third of people said they were very happy with life; in the mid- to late 2000s, that level of reported happiness was the same as or, if anything, a little lower than it had been three decades earlier.

It might be thought that this is open to a killer objection: Perhaps humans will always re-norm their answers as the years pass, which would make trends impossible. But the evidence does not support such a view. For example, it is known that American women have become steadily less happy over time (Blanchflower & Oswald, 2004; Stevenson & Wolfers, 2008).

A more detailed kind of well-being equation is given in Table 2. In this case, the sample size is larger, at approximately 300,000 Americans in 2009 (using the Behavioral Response Factor Surveillance System, organized by the Centers for Disease Control). Two well-being variables are available in BRFSS data: life satisfaction and reported days of bad mental health. The questions' wordings are, respectively:

Table 2
Well-Being Equations for the United States—BRFSS, 2009

	<i>Life Satisfaction</i>		<i>Days of Bad Mental Health</i>	
Age	-.0039 (9.82)	-.0061 (15.22)	.0299 (6.06)	.0431 (8.71)
Age ²	.00005 (13.03)	.00007 (19.39)	-.0007 (17.59)	-.0009 (20.60)
Male	-.0067 (3.10)	-.0194 (8.99)	-1.1054 (42.03)	-1.0160 (38.57)
# of adults in household	.0013 (0.92)	-.0036 (2.45)	-.0053 (0.29)	.0381 (2.09)
Exercise past 30 days	.1291 (54.23)	.1165 (49.13)	-1.3622 (46.99)	-1.2729 (43.91)
Black	.0175 (4.46)	.0400 (10.20)	-.6370 (13.31)	-.8254 (17.24)
Asian	-.0709 (8.93)	-.0571 (7.24)	-.6266 (6.50)	-.7397 (7.69)
Hawaiian	.0193 (1.26)	.0299 (1.97)	-.0142 (0.08)	-.1151 (0.62)
American Indian	-.0022 (0.29)	.0248 (3.23)	.4234 (4.51)	.1840 (1.96)
Other race	-.0162 (2.35)	.0157 (2.30)	-.1631 (1.95)	-.3890 (4.65)
No race	-.0848 (3.68)	-.0647 (2.83)	.9207 (3.28)	.7535 (2.70)
Multi-race	-.0180 (0.16)	-.0547 (0.50)	1.7733 (1.31)	2.0666 (1.53)
Hispanic	.0054 (0.97)	.0369 (6.57)	-.1275 (1.86)	-.3612 (5.27)
Divorced	-.0019 (0.45)	-.0024 (0.58)	.7108 (10.81)	.7041 (13.60)
Married	.2220 (60.04)	.1646 (43.77)	-.4860 (4.35)	-.0573 (1.25)
Widowed	.0385 (8.18)	.0221 (4.74)	.2491 (27.26)	.3461 (6.04)
Separated	-.0903 (11.73)	-.0879 (11.49)	2.5506 (5.65)	2.4812 (26.59)
Living as married	.0759 (10.37)	.0532 (7.31)	.5027 (0.99)	.6694 (7.54)
# children in household	-.0026 (2.33)	-.0016 (1.47)	.0229 (4.63)	.0085 (0.61)
Self-employed	.0047 (1.28)	.0166 (4.52)	.2084 (4.63)	.1044 (2.32)
Unemployed < 12 months	-.3056 (46.01)	-.2327 (34.70)	3.5361 (43.78)	2.8813 (35.20)
Unemployed ≥ 12 months	-.2431 (43.86)	-.1870 (33.60)	2.5809 (38.35)	2.1283 (31.35)
Home worker	-.0086 (2.07)	.0141 (3.40)	.6465 (12.74)	.4683 (9.21)
Student	-.0007 (0.08)	.0260 (3.13)	.7134 (7.03)	.4714 (4.65)
Retired	.0035 (1.08)	.0372 (11.38)	.6546 (16.49)	.4197 (10.48)
Unable to work	-.3740 (85.49)	-.2996 (66.05)	7.0322 (131.88)	6.3257 (113.95)
BMI	-.0044 (26.33)	-.0039 (23.17)	.0451 (21.71)	.0412 (19.89)
Fruit & veg 1–3/day	.0979 (19.43)	.0905 (18.09)	-1.0454 (17.04)	-.9771 (15.97)
Fruit & veg 3–5/day	.1487 (29.22)	.1377 (27.23)	-1.3382 (21.61)	-1.2450 (20.15)
Fruit & veg ≥ 5/day	.1830 (34.75)	.1716 (32.78)	-1.3990 (21.82)	-1.3068 (20.43)
Moderate exercise mins.	.0000 (11.57)	.00003 (13.96)	.0001 (4.24)	.00009 (1.48)
Vigorous exercise mins.	.0000 (12.94)	.00005 (11.93)	-.0000 (1.12)	-.00003 (3.11)
Grades 1–8	-.0230 (0.75)	-.0156 (0.52)	.4528 (1.21)	.3804 (1.02)
Grades 9–12	-.0025 (0.08)	-.0028 (0.09)	.4553 (1.23)	.4924 (1.33)
HS graduate	.0246 (0.82)	.0025 (0.09)	-.0656 (0.18)	.2070 (0.56)
Some college	.0348 (1.16)	-.0091 (0.31)	.1082 (0.29)	.5472 (1.49)
College graduate	.1034 (3.43)	.0221 (0.74)	-.3858 (1.04)	.2775 (0.75)
Smoked 100 cigarettes	-.0623 (30.37)	-.0577 (28.31)	.9483 (37.99)	.9191 (36.89)
\$10k & <\$15k income		.0334 (5.28)		-.7093 (9.17)
\$15k & <\$20k income		.0755 (12.54)		-1.1376 (15.44)
\$20k & <\$25k income		.0883 (15.02)		-1.5084 (20.96)
\$25k & <\$35k income		.1193 (20.68)		-1.9109 (27.08)
\$35k & <\$50k income		.1703 (29.75)		-2.1715 (31.01)

Table 2
Continued

	<i>Life Satisfaction</i>		<i>Days of Bad Mental Health</i>	
\$50k & <\$75k income		.2240 (38.44)		−2.4656 (34.59)
\$75k or more income		.3044 (52.20)		−2.7976 (39.21)
Constant	3.2513	3.1876	4.7877	5.9582
N	365,449	365,446	365,307	365,303
Adjusted R ²	.1245	.1368	.1184	.1237

The data are from the Behavioral Response Factor Surveillance System (BRFSS). The excluded categories are Income <\$10,000, white, Alabama, single, employee, never attended school, and fruit and vegetables less than once a day or never. Additional controls include if a variable was missing. Equations include 50 state dummies plus dummies for Guam, Puerto Rico, and the U.S. Virgin Islands.

Question wordings:

“In general, how satisfied are you with your life?” Here people are able to answer one of the following: very satisfied, satisfied, dissatisfied, or very dissatisfied.

“Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”

Mean (SD) life satisfaction = 3.37 (0.63). Mean number of days of bad mental health = 3.35 (7.68).

- (a) “In general, how satisfied are you with your life?” Here people are able to answer one of the following: very satisfied, satisfied, dissatisfied, or very dissatisfied.
- (b) “Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” The means (SDs) for these are 3.37 (0.63) and 3.35 (7.68).

Because of the large sample size, it is possible in the well-being regression equations of Table 2 to examine the statistical links between feelings of well-being and many of life’s influences, such as, among others, exercising (positive for well-being), being male (negative), being Native American (negative), having children in the household (negative), living as married (positive, though smaller than for marriage), being self-employed (positive, once income is held constant), a high body mass index (negative), eating fruit and vegetables (positive), and smoking (negative).

Here in Table 2, as in the Table 1 results (which used GSS data), there is a marked positive association between income and psychological well-being. Because the relationship between utility and income is so fundamental to economics (and parts of management science and psychology), it is illuminating to study what is implied by the income coefficients in the lower part of the first column of Table 2. For example, the life-satisfaction coefficients rise from 0.0883 for the

average level of American income (between \$20,000 and \$25,000) to 0.3044 for the higher income band of over \$75,000 a year. This is a (major) difference of approximately 0.22 life-satisfaction points. It corresponds in size to the difference in life satisfaction between being married and being single, and is nearly as large in absolute size as the consequences for well-being of being unemployed. Thus, as a matter of correlation, it appears that money buys happiness—and not in negligible quantities.

What is the link, in the United States, between education and life satisfaction? Here, the first two columns of Table 2 seem particularly interesting. In column 1, where there is no control for the level of income, life satisfaction is higher the higher a person’s level of education. But in column 2 of Table 2 that disappears: There are then no statistically significant effects from the education variables. This is not as paradoxical as one might initially think. In moving between column 1 and column 2 of Table 2 the statistical significance switches from education to income. The latter variables start to work strongly, yet the coefficient on college graduation now drops to 0.0221 (with a t-statistic of only 0.74). Hence, the extra satisfaction in life that is associated with greater education, according to these U.S. equations in Table 2, comes solely from the extra income that education brings. Interestingly, the coefficient on the black demographic variable is positive here, in Table 2 for the modern BRFSS data, whereas it was negative in our earlier GSS results.

That is not easily explained but is consistent with the possibility that racial discrimination has declined.

The two right-hand columns of Table 2 give the findings for an alternative well-being variable, days of bad mental health in the previous month, for which survey respondents can give answers from 0 (no days) to 30 (every day). This variable might be thought of as a crude measure of mental strain or depression. Most of the coefficients enter with a sign consistent with that in the life-satisfaction equation of Table 2. The only clear exception is for males. Men are less satisfied on average, but also have fewer bouts of poor mental health. It is known from the psychiatry literature that females seem to suffer mental health problems more than males. A possible reconciliation of these seemingly contradictory facts is that women may be happier on average than men but also have a psychological-illness distribution that is more skewed to extreme values.

Well-Being Across Different Countries in the World

One of the interesting facts about recent happiness research is how its empirical findings have been found to generalize across countries.⁵ To illustrate that, Table 3 moves to international data, specifically setting out European well-being regression equations. The sample size is approximately 35,000 randomly selected individuals across 31 nations (from Austria to Macedonia in Table 3, where Austria is the base country against which comparisons are made), using data taken from the 2007 European Quality of Life Survey. Using these data, both happiness and life-satisfaction equations can be estimated.

We learn at least three things from Table 3. First, the statistical structure of well-being in the European nations looks almost exactly the same as

in the United States. The same variables enter, and in almost identical ways (to see this, compare Table 3 against Table 2). It may be this robustness that has stimulated so much recent happiness work of the same kind; researchers in country Y have found, once they started to interrogate their own nation's data, that they could replicate the conclusions from happiness research in other countries. We stumbled on this in the 1990s, though we had started such work with datasets only on Britain and the United States.

Second, it makes little difference whether the well-being measure is happiness or life satisfaction; the four columns of Table 3 illustrate that. In each variant, the qualitative structure of the two kinds of equations is the same.

Third, it seems possible to assess the happiness levels of different countries in comparable ways. This is achieved by examining regression-equation coefficients for different nations. Doing this, Table 3 paints what is now, to researchers, a familiar cross-country pattern in the research literature (seen by reading off the country-dummy coefficients).

In Table 3, which draws on data from 2007, the particularly satisfied European nations include Denmark (coefficient 1.4820), Sweden, Finland, Norway, Luxembourg, the Netherlands, and Ireland, and the rather dissatisfied European countries include Bulgaria (−1.8028), Hungary, Macedonia, and Latvia. As is clear from this list, and Table 3 more broadly, Eastern European transition nations have citizens who are particularly unhappy with their lives.

What might be viewed as remarkable, and was not predicted by researchers, is the relatively poor standing—in a well-being league table—of certain Western European nations such as Italy (−0.3473) and Portugal (−0.4631). Currently it is not known why these nations come out so low.

For some years, the Human Development Index, or HDI, has been promoted by the United Nations as an early attempt to go beyond the tradition of viewing GDP as the sufficient statistic for well-being. The HDI index is an amalgamation of three kinds of data: real income, lifespan, and education. Although conceived independently, the HDI index links intellectually to the newer empirical research on happiness. Across European

⁵ Published articles on international evidence include Stack and Eschelman (1998), Lester (2002), Schyns (2002), Steel and Ones (2002), Hagerty and Veenhoven (2003), Fahey and Smyth (2004), Powdthavee (2005), Bray and Gunnell (2006), the tongue-in-cheek Christensen, Herskind, and Vaupel (2006), Vemuri and Constanza (2006), Blanchflower (2001, 2009, in press), Appleton and Song (2008), Deaton (2008), Diener, Lucas, and Schimmack (2008), Howell and Howell (2008), Rehdanz and Maddison (2008), and Diener, Ng, Harter, and Arora (2010).

Table 3
Well-Being Equations From the European Quality of Life Survey, 2007 (OLS)

	<i>Life Satisfaction</i>		<i>Happiness</i>	
Age	-.0589 (14.39)	-.0557 (11.36)	-.0573 (15.39)	-.0577 (12.90)
Age ²	.0006 (15.83)	.0006 (12.55)	.0005 (14.99)	.0005 (12.37)
Male	-.0545 (2.42)	-.0319 (1.18)	-.0540 (2.63)	-.0474 (1.93)
Belgium	.7099 (8.27)	.6395 (5.89)	.6004 (7.70)	.5344 (5.40)
Bulgaria	-1.8028 (21.09)	-1.9085 (17.54)	-1.4252 (18.22)	-1.5424 (15.49)
Croatia	-.4187 (4.88)	-.4564 (4.33)	-.2716 (3.47)	-.2597 (2.70)
Cyprus	.2954 (3.33)	.2554 (2.30)	.3577 (4.44)	.3628 (3.59)
Czech Republic	-.3147 (3.84)	-.3997 (3.73)	.2468 (3.31)	.2128 (2.18)
Denmark	1.4820 (17.32)	1.3749 (12.97)	1.0359 (13.30)	.9400 (9.72)
Estonia	-.1170 (1.35)	-.1613 (1.51)	.1413 (1.79)	.0958 (0.98)
Finland	1.1739 (13.65)	1.0897 (10.21)	.9718 (12.43)	.9345 (9.61)
France	.4054 (5.15)	.3495 (3.50)	.5210 (7.28)	.4542 (4.99)
Germany	.2508 (3.40)	.1420 (1.49)	.2187 (3.26)	.1398 (1.60)
U.K.	.4169 (5.28)	.2826 (2.65)	.5878 (8.19)	.4686 (4.83)
Greece	-.1739 (2.02)	-.2787 (2.55)	.1456 (1.86)	.0653 (0.65)
Hungary	-1.0980 (12.78)	-1.1889 (10.95)	-.1710 (2.19)	-.2395 (2.42)
Ireland	.7444 (8.58)	.6805 (5.61)	.7518 (9.53)	.6254 (5.65)
Italy	-.3473 (4.41)	-.3456 (2.88)	-.2819 (3.94)	-.3530 (3.23)
Latvia	-.6727 (7.73)	-.6497 (5.89)	-.2829 (3.57)	-.2334 (2.32)
Lithuania	-.4941 (5.69)	-.5083 (4.81)	-.0520 (0.66)	-.0394 (0.41)
Luxembourg	1.1124 (12.66)	1.0056 (8.53)	.8508 (0.65)	.7698 (7.16)
Macedonia	-1.2987 (14.91)	-1.3752 (12.91)	-.9277 (11.65)	-.9437 (9.71)
Malta	.5359 (5.97)	.5590 (4.76)	.5227 (6.40)	.6240 (5.82)
Netherlands	.8170 (9.44)	.7385 (6.88)	.6288 (8.00)	.5546 (5.67)
Norway	1.1527 (13.31)	1.0238 (9.66)	.6773 (8.60)	.6272 (6.49)
Poland	-.0732 (0.92)	-.0696 (0.68)	.0318 (0.44)	.0611 (0.65)
Portugal	-.4631 (5.34)	-.6117 (4.88)	-.1894 (2.41)	-.2437 (2.13)
Romania	-.3379 (3.88)	-.4136 (3.79)	-.2384 (3.05)	-.2712 (2.76)
Slovakia	-.3316 (3.95)	-.4122 (3.80)	.1165 (1.53)	.0453 (0.46)
Slovenia	.2257 (2.65)	.1454 (1.33)	.2674 (3.45)	.1867 (1.87)
Spain	.5567 (6.45)	.4070 (3.41)	.4777 (6.09)	.4484 (4.12)
Sweden	1.3150 (15.25)	1.2612 (12.14)	.8281 (10.56)	.7919 (8.36)
Turkey	-.4439 (5.49)	-.4684 (4.57)	-.5832 (7.94)	-.5746 (6.15)
Household size	-.0107 (1.12)	-.0141 (1.20)	.0170 (1.96)	.0083 (0.78)
# of children	.0161 (1.63)	.0163 (1.36)	.0276 (3.08)	.0298 (2.73)
Primary education	.3500 (5.11)	.3451 (4.19)	.4321 (6.94)	.3784 (5.04)
Lower secondary	.5313 (7.64)	.5548 (6.63)	.5820 (9.21)	.6065 (7.95)
Upper secondary	.7295 (10.54)	.7708 (9.26)	.7424 (11.80)	.7650 (10.08)
Postsecondary	.7552 (9.79)	.8331 (8.98)	.7991 (11.40)	.8369 (9.89)
Tertiary, first level	.8703 (11.96)	.8874 (10.13)	.8149 (12.33)	.8074 (10.11)
Tertiary, advanced	.9407 (7.95)	.8794 (6.02)	.8528 (7.93)	.8312 (6.23)
Employed on leave	.0388 (0.46)	.0342 (0.35)	.0557 (0.72)	.0438 (0.49)
Unemployed <12 months	-.9621 (13.19)	-.9096 (10.44)	-.6537 (9.84)	-.6811 (8.56)

Table 3
Continued

	<i>Life Satisfaction</i>		<i>Happiness</i>	
Unemployed \geq 12 months	−1.2738 (20.63)	−1.2388 (17.18)	−.8331 (14.83)	−.8243 (12.54)
Disabled	−1.1722 (16.63)	−1.1532 (14.23)	−1.0599 (16.52)	−1.0340 (13.99)
Retired	−.0843 (2.16)	−.0553 (1.19)	−.0852 (2.41)	−.0673 (1.59)
Homemaker	−.0380 (0.90)	−.0130 (0.25)	−.0668 (1.75)	−.0711 (1.48)
Student	.2282 (3.97)	.2476 (3.37)	.1561 (2.98)	.1346 (2.01)
Separated/divorced	−.3456 (7.16)	−.2988 (5.23)	−.3459 (7.88)	−.2943 (5.65)
Widowed	−.2612 (5.16)	−.1857 (3.10)	−.3675 (7.99)	−.3050 (5.58)
Married	.4651 (12.63)	.4808 (10.79)	.5828 (17.41)	.6318 (15.55)
Internet daily	.5177 (15.67)	.5250 (13.02)	.4067 (13.54)	.4004 (10.89)
Internet 2/week	.4621 (11.86)	.4625 (9.69)	.3238 (9.13)	.3555 (8.17)
Internet occasionally	.3432 (9.06)	.3909 (8.47)	.2489 (7.23)	.2908 (6.91)
Religion every day	.4430 (5.09)	.4895 (4.71)	.3565 (4.50)	.3909 (4.13)
Religion $>$ once/week	.3778 (6.21)	.4404 (6.04)	.2789 (5.03)	.3133 (4.71)
Religion once a week	.3600 (9.94)	.3765 (8.59)	.2782 (8.46)	.2573 (6.44)
Religion 1 or 2/month	.1815 (4.66)	.1781 (3.78)	.1808 (5.10)	.1864 (4.34)
Religion few/year	.1497 (4.95)	.1546 (4.28)	.1381 (5.03)	.1281 (3.89)
Religion once year	.0499 (1.15)	.0823 (1.61)	.0326 (0.82)	.0651 (1.40)
Religion $<$ 1 year	−.0195 (0.52)	−.0164 (0.37)	−.0384 (1.12)	−.0317 (0.77)
Village/small town	.0667 (1.93)	.0415 (1.00)	−.0006 (0.02)	−.0231 (0.61)
Medium town	.0160 (0.43)	−.0220 (0.50)	−.0163 (0.48)	−.0177 (0.44)
City/suburb	−.0657 (1.77)	−.0841 (1.88)	−.0092 (0.28)	−.0117 (0.29)
Citizen	.2600 (4.40)	.2714 (3.73)	.1907 (3.55)	.2120 (3.19)
Household income (euros)	.000030 (5.79)	.000018 (3.66)		
Constant	6.5799	6.4326	7.0638	7.0361
N	34,791	24,444	34,704	24,424
Adjusted R ²	.2261	.2458	.1890	.2024

Excluded categories: Austria, attends religious events never, Internet never, employed, single, no education, and countryside. Wordings:

Q1. *All things considered, how satisfied would you say you are with your life these days? Please tell me on a scale of 1 to 10, where 1 means very dissatisfied and 10 means very satisfied.* Mean (SD) = 6.89 (2.17).

Q2. *Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy.* Mean (SD) = 7.33 (1.92).

nations, there is a reasonably close correlation between HDI and subjective well-being.

Where do the Europeans and the Americans lie in a world ranking of happiness levels? To answer that, it is necessary to have cross-national data on statistically representative samples of the population collected in the same way in every country. Such data sets are now available. One source is the International Social Survey Programme, or ISSP (others are the World Values Survey and recent Gallup Poll data).

In the ISSP, the well-being question is “If you were to consider your life in general these days, how happy or unhappy would you say you are, on

the whole? [4] Very happy; [3] Fairly happy; [2] Not very happy; [1] Not at all happy.”

ISSP covers data on 33 nations. In this case, in results available from the authors but not reported here, Australia is set as the base country against which coefficient comparisons are made. The happiest countries are Ireland (coefficient 0.2196), Switzerland (0.1677), Mexico (0.1559), the United States (0.0939), Great Britain (0.0844), and New Zealand (0.0754). The least happy are Russia (−0.6096), Bulgaria (−0.4958), Latvia (−0.4257), and Croatia (−0.3718). Hence, the United States does very respectably.

Other interesting patterns in Table 3 include

the fact that Finland and France come out relatively poorly, at -0.2285 and -0.3285 , respectively. South Korea also appears low down a well-being scale, with a country dummy coefficient of -0.3483 .

What of feelings of well-being in the workplace? Although there has been a long history to the study of data on job satisfaction, comparable estimates across nations are rarer. Looking at job satisfaction regression for the United States, older people, holding other factors constant, are more satisfied (data available on request). There is only a slight difference between males and females: Men are less satisfied with their jobs. There is a major satisfaction premium from self-employment. Black people are much less satisfied with work than whites or other nonwhites. Over time, since the beginning of the data in 1972, there is evidence of a slight downward trend in job satisfaction in the United States (coefficient -0.0015). The highly educated are more satisfied; so too are part-timers.

Examining such data, one finds a powerful link between job insecurity and low well-being. Those workers who think it “not at all likely” they will lose their jobs are approximately 0.3 satisfaction points more content than those who believe it is fairly likely. Another negative influence (-0.1079) comes from answering, “It would be not at all easy to find another job.” There is no statistically significant association between the level of job satisfaction and being in a trade union. What does matter, however, as would be anticipated, is the level of a person’s income. It is clear that when the log of annual pay is entered as a control its effect is strong and positive. Moreover, the level of education then loses statistical significance. It seems that educated Americans are more satisfied with their working life principally because their education brings them a higher annual salary. There is a large literature on job satisfaction and productivity that we cannot review here (Judge, Thoresen, Bono, & Patton, 2001).

Interpreting the Patterns

One intriguing fact comes through strongly in these tables and has been found often in the literature. Whether using regression equations or simple tabulations, small or large samples, sim-

ple cross-sections or pooled data, a number of the small social-democratic countries of Europe are consistently estimated to be among the world’s happiest nations.

While the multi-country studies’ findings are intriguing, commentators including Ostroot and Snyder (1985) and Argyle (2001) have pointed out that it is hard to know what to make of the cross-national claims. First, language differences raise the worry that words such as “life satisfaction” cannot be translated sufficiently to ensure that the variations in reported well-being are meaningful. Second, cultural differences—in some countries it may be less acceptable to admit to unhappiness—further complicate inference. Third, when visited, these European nations anecdotally appear similar in wealth, and indeed in most ways of living, so it is not easy to understand where these apparent happiness differences would come from. None of these objections is definitive, but all of them mean that there are doubts over the substantive interpretation of estimated cross-national happiness variation.

Some writers have nevertheless made a case for taking cross-country subjective well-being data seriously in the evaluation of human welfare.⁶ This form of research may even presage for international agencies a move away from simple GDP targets of the sort that have been favored in post-war economic policy. However, to make progress on the construction of a national well-being index, a better empirical justification for the use of subjective life-satisfaction and happiness statistics may be needed.

Blanchflower and Oswald (2008b) tried to deal with that concern. Their paper took an unconventional approach to assessing well-being: the use of cross-national survey data on hypertension (high blood pressure). The paper estimated both psychological well-being and blood pressure equations. Using Pearson and Spearman rank tests, it found that the structure of the coefficients on country dummy variables is similar in both kinds of regression equations. Happy countries seem to have fewer blood

⁶ See, for example, Easterlin (1974), Clark and Oswald (1994), Inglehart (1996), Ng (1997), Oswald (1997), Diener et al. (2008), Kahneman et al. (2004), and Vemuri and Constanza (2006).

pressure problems. This has two implications. First, it suggests that there may be a case for taking seriously the subjective happiness measurements made across the world: They follow a pattern that is reassuringly like the (inverse of) high blood-pressure estimates. Second, in constructing new kinds of economic and social policies in the future, where well-being rather than real income is likely to be a prime concern, there are grounds for economists to study people's blood pressure.

The believability of subjective well-being patterns across nations can be scrutinized in other ways. Various happiness correlates can be studied, for instance, in the search for corroboration. Di Tella, MacCulloch, and Oswald (2003) showed, encouragingly for the quality of subjective data, that in a sample of Western nations there is evidence that the rises and falls in suicide rates move in the opposite direction to changes in happiness. The null hypothesis of no correlation, however, can be rejected only at the 10% level. Bray and Gunnell (2006) demonstrated that suicide is negatively correlated with happiness, and can reject the null of a zero correlation at the 5% level, but in a smaller sample Lester (2002) did not find such clear-cut results. Other national correlates studied in the literature include trust and political institutions (Helliwell, 2003; Hudson, 2006).

None of these articles, though, is an attempt to evaluate the persuasiveness of different measures of mental well-being. There is some evidence that happiness and heart rate are negatively associated in men, and that well-being is correlated with cortisol levels and cardiovascular behavior (Step-toe, Wardle, & Marmot, 2005). However, internationally comparable measures of hypertension, where the demographic and educational characteristics of randomly sampled people are known, are in short supply. Social scientists have paid little attention to the idea that heart variables could play a role as a relevant well-being variable.

Much research has now been done that attempts to explain the cross-country pattern of subjective well-being. Credit should go especially to Ed Diener and colleagues for analysis on this (Diener et al., 1995a, b). At the level of correlation, it has been argued that happy countries have low inequality (Alesina, Di Tella, & MacCulloch,

2004; Winkelmann & Winkelmann, 2010), high social capital and strong friendship networks (Bjornskov, 2003; Bjornskov, Dreher, & Fischer, 2008; Vermuri & Constanza, 2006), low unemployment and inflation (Di Tella et al., 2001, 2003; Gandelman & Hernandez-Murillo, 2009; Helliwell, 2003; Whiteley, Clarke, Sanders, & Stewart, 2010), high levels of democracy and democratic participation (Frey & Stutzer, 2000; Helliwell & Huang, 2008), high trust (Hudson, 2006), strong welfare states and public spending (Di Tella et al., 2003; Kotakorpi & Laamen, 2010; Pacek & Radcliff, 2008), and low pollution (Di Tella & MacCulloch, 2008).

The Bjornskov et al. (2008) paper is of particular interest. It examined the statistical impact of a wide range of cross-country determinants of life satisfaction. To do so, it used a database of 90,000 observations in 70 countries. The authors distinguished four groups of aggregate variables as potential determinants of satisfaction: political, economic, institutional, and human development and culture. They then used ordered probits to investigate the importance of these variables on individual life satisfaction and test the robustness of the results with extreme bounds analysis. Their results revealed that "only a small number of factors, such as openness, business climate, post-communism, the number of chambers in parliament, Christian majority, and infant mortality" robustly influence life satisfaction across countries, while the importance of many variables suggested in the previous literature is not confirmed (p. 165). This remains largely true, they argued, when the analysis splits national populations according to gender, income, and political orientation.

Another notable study is Di Tella and MacCulloch (2008). The Easterlin paradox, as explained earlier, refers to the fact that happiness data are typically stationary in spite of considerable increases in income. This amounts to a rejection of the hypothesis that current income is the only argument in the utility function, argued Di Tella and MacCulloch. They showed that the happiness responses of around 350,000 people living in Organisation for Economic Co-operation and Development (OECD) countries between 1975 and 1997 were positively correlated with the

level of the country's income, the welfare state, and (weakly) with life expectancy; they were negatively correlated with the average number of hours worked, environmental degradation (measured by sulfur emissions), crime, openness to trade, inflation, and unemployment. This analysis was done with controls for country and year dummies.

In an original line of argument, the authors showed that effects separate across groups in a pattern that appears plausible (e.g., the rich suffer environmental degradation more than the poor). Based on actual changes from 1975 to 1997, they showed that only small contributions to happiness can be attributed to the increase in income in the sample. In fact, the actual changes in several of the omitted variables, such as life expectancy, hours worked, inflation, and unemployment, also contributed to happiness over this time period since life expectancy rose and the others, on average, fell. Consequently, the Di Tella-MacCulloch study concluded that the unexplained trend in happiness is even bigger than would be predicted if income were the only argument in the utility function. In other words, introducing omitted variables further confirms Richard Easterlin's national income-growth-without-happiness paradox.

The Future and Possible Links With Medical Research

Other kinds of researchers study human well-being. Our instinct is that this social science literature on happiness will slowly join up with a medical and biological literature on physical well-being. Some epidemiological publishing of this kind is already visible; the connections between the mind and the body are known to be important, and well-being research by its nature has to consider both the mental and the physical.⁷

There are at least three reasons why it can be expected that in the future these different litera-

tures and academic disciplines will draw together. One is that the distinction between happiness and mental health is growing ever more blurry (see Hu et al., 2007, for example, which showed that mental health scores are measures of positive well-being and thus not of use just to psychiatrists). The second is that the distinction between physical and psychological health is arguably artificial. It is known in the happiness literature that health variables enter in statistically significant ways in well-being equations. The third is that if the health of the body and the health of the mind are connected—and there is growing evidence of this, including in papers such as Cohen et al. (2003) and Ebrecht et al. (2004)—it is scientifically unattractive to try to keep the two strands apart in research.

Nevertheless, it is not easy to believe that the convergence of the happiness, mental health, psychology, and medical literatures will occur quickly (even though it would be scientifically valuable if it did). A central reason is that researchers do not have strong incentives to read and cite beyond their own discipline's journals. Also, although classical statistical theory underpins all work in these fields, different kinds of disciplines have evolved different ways of presenting data and tests. Statistical and linguistic conventions differ from one discipline to another. Compare, for instance, the style of papers in *Science*, the *New England Journal of Medicine*, the *Quarterly Journal of Economics*, and the *Journal of Personality and Social Psychology*. Few social scientists have had any training in physiology, and few physicians and hard scientists have been trained in social science. We believe that not many of those who advocate interdisciplinary work have tried to publish in the elite journals of disciplines other than their own; the practical difficulties are intense.

All this means that the language, sociological, and stylistic differences across academic disciplines act as a set of barriers that will slow the rate of intellectual convergence. Nevertheless, the study of human well-being is intrinsically as multidisciplinary as it is fascinating. In our opinion, this is an arena in which the hard sciences and the social sciences inherently abut one another.

⁷ Work at the border between health and happiness currently includes Jonas and Lando (2000), Cohen, Doyle, Turner, Alper, and Skoner (2003), Ebrecht et al. (2004), Steptoe et al. (2005), Bell and Blanchflower (2007), Blanchflower and Oswald (2008b), and Graham (2008). The biomarker literature includes Edmunds (1982), Steptoe et al. (2005), Crimmins, Vasunilashorn, Kim, and Alley (2008), Seeman et al. (2008), and Singh and Rose (2009).

Slowly, perhaps painfully, we will all have to learn to talk to one another.

Conclusions

Human well-being is of intellectual and personal interest to individuals, social scientists, and policy makers. Understanding the determinants of something as complex as happiness is difficult; attempts to do so will, inevitably, continue to provoke disagreement. However, in the last few decades, and especially through the 2000s, a new literature—for which researchers including economist Richard Easterlin and psychologists Edward Diener and the late Michael Argyle take particularly early credit—has sprung up. In it, scholars use data on subjective well-being to explore the statistical determinants of happiness, life satisfaction, and mental health.

Much of the considerable knowledge that has been gained is currently at the level of correlation. That does not make it wrong or misleading. But it does mean that, as is often true with observational—rather than experimental—social science, we have to be cautious before we can go from strong patterns in the data to judgments about cause and effect (in a form, say, that would be decisively helpful to those involved in policy making). The very latest style of statistical research, which is seen in scholarly journals more and more frequently, draws on longitudinal well-being data, and on experimental or quasi-experimental methods. This will gradually, in the way common in modern social science, lead to a better causal understanding.

Currently, a number of patterns—as illustrated earlier in our tables—have been replicated persuasively in the data of large numbers of nations. Happy people are disproportionately the young and old (not the middle-aged), rich, educated, married, employed, healthy, exercisers with diets rich in fruit and vegetables, and slim.⁸ Happy countries are disproportionately rich, educated, democratic, trusting, and low-unemployment.

However, even among nations that meet these criteria, some do noticeably well in happiness

rankings, including Denmark, the Netherlands, and Ireland. Unfortunately, we do not yet know why these countries are so perplexingly happy (Biswas-Diener, Vitterso, and Diener, 2010, think that part of Denmark's secret is that it somehow cuts down on the statistical tail—that is, has low numbers of extremely unhappy individuals). It is difficult to avoid noticing that smallness of a country seems to help it be a happy one. That may be a spurious correlation, or may indicate that a geographically small or low-population country feels genuinely more like a single, friendly unit (one of us recently heard a Danish politician explain Denmark's high happiness by saying “we feel we are all one tribe”). It is likely that many other characteristics of nations matter, at a deep level, for human happiness; our knowledge here is sparse. Nor do we yet understand how the physical health and mental health of nations are connected. That fascinating research area lies almost uncharted. It will surely provide material for hundreds of future PhDs.

By its nature, this multidisciplinary research field is, and will remain, one of genuine significance to human society. Almost everyone is interested in happiness.

References

- Alesina, A., Di Tella, R., & MacCulloch, R. (2004). Inequality and happiness: Are Americans and Europeans different? *Journal of Public Economics*, 88, 1009–2042
- Appleton, S., & Song, L. (2008). Life satisfaction in urban China: Components and determinants. *World Development*, 36, 2325–2340.
- Argyle, M. (2001). *The psychology of happiness*, 2nd ed. London: Routledge.
- Bell, D., & Blanchflower, D. G. (2007). The Scots may be brave but they are neither healthy nor happy. *Scottish Journal of Political Economy*, 54, 166–194.
- Bell, D., & Blanchflower, D. G. (2010). UK unemployment in the great recession. *National Institute Economic Review*, 214(October), R3–R25.
- Biswas-Diener, R., Vitterso, J., & Diener, E. (2010). The Danish effect: Beginning to explain high well-being in Denmark. *Social Indicators Research*, 97, 229–246.
- Bjornskov, C. (2003). The happy few: Cross-country evidence on social capital and life satisfaction. *Kyklos*, 56, 3–16.
- Bjornskov, C., Dreher, A., & Fischer, J. A. V. (2008). Cross-country determinants of life satisfaction: Exploring different determinants across groups in society. *Social Choice and Welfare*, 30, 119–173.
- Blanchflower, D. G. (2001). Unemployment, well-being

⁸ Work on BMI and well-being includes Oswald and Powdthavee (2007) and Blanchflower et al. (2009).

- and wage curves in Eastern and Central Europe. *Journal of Japanese and International Economies*, 15, 364–402.
- Blanchflower, D. G. (2009). International evidence on well-being. In A. Krueger (Ed.), *Measuring the subjective well-being of nations* (pp. 155–226). Chicago: NBER and University of Chicago Press.
- Blanchflower, D. G., & Oswald, A. J. (2004). Well-being over time in Britain and the USA. *Journal of Public Economics*, 88, 1359–1386.
- Blanchflower, D. G., & Oswald, A. J. (2008a). Is well-being U-shaped over the life cycle? *Social Science & Medicine*, 66, 1733–1749.
- Blanchflower, D. G., & Oswald, A. J. (2008b). Hypertension and happiness across nations. *Journal of Health Economics*, 27, 218–233.
- Bray, I., & Gunnell, D. (2006). Suicide rates, life satisfaction and happiness as markers for population mental health. *Social Psychiatry and Psychiatric Epidemiology*, 41, 333–337.
- Brown, G. D. A., Gardner, J., Oswald, A. J., & Qian, J. (2008). Does wage rank affect employees' well-being? *Industrial Relations*, 47, 355–389.
- Christensen, K., Herskind, A. M., & Vaupel, J. W. (2006). Why Danes are so smug: Comparative study of life satisfaction in the European Union. *BMJ: British Medical Journal*, 333, 1289–1291.
- Clark, A. E., & Oswald, A. J. (1994). Unhappiness and unemployment. *Economic Journal*, 104, 648–659.
- Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative income, happiness, and utility: An explanation for the Easterlin paradox and other puzzles. *Journal of Economic Literature*, 46, 95–144.
- Clark, A. E., & Senik, C. (2010). Who compares to whom? The anatomy of income comparisons in Europe. *Economic Journal*, 120, 573–594.
- Cohen, S., Doyle, W. J., Turner, R. B., Alper, C. M., & Skoner, D. P. (2003). Emotional style and susceptibility to the common cold. *Psychosomatic Medicine*, 65, 652–657.
- Crimmins, E., Vasunilashorn, S., Kim, J. K., & Alley, D. (2008). Biomarkers related to aging in human populations. *Advances in Clinical Chemistry*, 46, 161–216.
- Daly, M., Oswald, A. J., Wilson, D., & Wu, S. (2010). *Dark contrasts: The paradox of high rates of suicide in happy places* (Working Paper). Warwick University.
- Daly, M. C., & Wilson, D. J. (2009). Happiness, unhappiness, and suicide: An empirical assessment. *Journal of the European Economic Association*, 7, 539–549.
- Deaton, A. (2008). Income, health, and well-being around the world: Evidence from the Gallup World Poll. *Journal of Economic Perspectives*, 22, 53–72.
- Devoe, S. E., & Pfeffer, J. (2009). When is happiness about how much you earn? The effect of hourly payment on the money-happiness connection. *Personality and Social Psychology Bulletin*, 35, 1602–1618.
- Diener, E., Diener, M., & Diener, C. (1995b). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology*, 69, 851–864.
- Diener, E., Lucas, R. E., & Schimmack, U. (2008). *National accounts of well-being*. Oxford, UK: Oxford University Press.
- Diener, E., Ng, W., Harter, J., & Arora, R. (2010). Wealth and happiness across the world: Material prosperity predicts life evaluation, whereas psychosocial prosperity predicts positive feeling. *Journal of Personality and Social Psychology*, 99, 52–61.
- Diener, E., Suh, E. M., Smith, H., & Shao, L. (1995). National differences in reported subjective well-being: Why do they occur? *Social Indicators Research*, 34, 7–32.
- Di Tella, R., & MacCulloch, R. J. (2008). Gross national happiness as an answer to the Easterlin paradox? *Journal of Development Economics*, 86, 22–42.
- Di Tella, R., MacCulloch, R. J., & Oswald, A. J. (2001). Preferences over inflation and unemployment: Evidence from surveys of happiness. *American Economic Review*, 91, 335–341.
- Di Tella, R., MacCulloch, R. J., & Oswald, A. J. (2003). The macroeconomics of happiness. *Review of Economics and Statistics*, 85, 809–827.
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29, 94–122.
- Duesenberry, J. S. (1949). *Income, saving and the theory of consumer behavior*. Cambridge, MA: Harvard University Press.
- Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In P. A. David & M. W. Reder (Eds.), *Nations and households in economic growth: Essays in honor of Moses Abramowitz* (p. 89–125). New York: Academic Press.
- Easterlin, R. A. (2003). Explaining happiness. *Proceedings of the National Academy of Sciences*, 100, 1117611183.
- Ebrecht, M., Hextall, J., Kirtley, L. G., Taylor, A., Dyson, M., & Weinman, J. (2004). Perceived stress and cortisol levels predict the speed of wound healing in healthy male adults. *Psychoneuroendocrinology*, 29, 798–809.
- Edmunds, O. P. (1982). The heart rate of students in examinations. *Journal of Social and Occupational Medicine*, 32, 32–36.
- Fahey, T., & Smyth, E. (2004). Do subjective indicators measure welfare? Evidence from 33 European societies. *European Societies*, 6, 5–27.
- Fliessbach, K., Weber, B., Trautner, P., Dohmen, T., Sunde, U., Elger, C., & Falk, A. (2007). Social comparison affects reward-related brain activity in the human ventral striatum. *Science*, 318, 1305–1308.
- Frey, B. S., & Stutzer, A. (2000). Happiness, economy and institutions. *Economic Journal*, 110, 918–938.
- Frey, B. S., & Stutzer, A. (2002). *Happiness and economics*. Princeton, NJ: Princeton University Press.
- Gandelman, N., & Hernandez-Murillo, R. (2009). The impact of inflation and unemployment on subjective personal and country evaluations. *Federal Reserve Bank of St. Louis Review*, 91, 107–126.
- Gilbert, D. (2006). *Stumbling on happiness*. New York: Alfred A. Knopf.
- Goldberg, D. P., Gater, T., Sartorius, N., Ustun, T. B., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The

- validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27, 191–197.
- Graham, C. (2005). Insights on development from the economics of happiness. *World Bank Research Observer*, 20, 201–231.
- Graham, C. (2008). Happiness and health: Lessons—and questions—for public policy. *Health Affairs*, 27, 72–87.
- Graham, C. (2009). *Happiness around the world: The paradox of happy peasants and miserable millionaires*. Oxford, UK: Oxford University Press.
- Grant, A. M., Christianson, M. K., & Price, R. H. (2007). Happiness, health, or relationships? Managerial practices and employee well-being tradeoffs. *Academy of Management Perspectives*, 21, 51–63.
- Green, F. (2006). *Demanding work: The paradox of job quality in the affluent economy*. Princeton, NJ: Princeton University Press.
- Green, F., & Tsitsianis, N. (2005). An investigation of national trends in job satisfaction in Britain and Germany. *British Journal of Industrial Relations*, 43, 401–429.
- Hagerty, M. R. (2000). Social comparisons of income in one's community: Evidence from national surveys of income and happiness. *Journal of Personality and Social Psychology*, 78, 764–771.
- Hagerty, M. R., & Veenhoven, R. (2003). Wealth and happiness revisited: Growing national income does go with greater happiness. *Social Indicators Research*, 64, 1–27.
- Helliwell, J. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling*, 20, 331–360.
- Helliwell, J., & Huang, H. F. (2008). How's your government? International evidence linking good government and well-being. *British Journal of Political Science*, 38, 595–619.
- Hodiamont, P. P. G., Rijnders, C. A. T., Mulder, J., & Furer, J. W. (2005). Psychiatric disorders in a Dutch Health Area: A repeated cross-sectional survey. *Journal of Affective Disorders*, 84, 77–83.
- Howell, R. T., & Howell, C. J. (2008). The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychological Bulletin*, 134, 536–560.
- Hu, Y. J., Stewart-Brown, S., Twigg, L., & Weich, S. (2007). Can the 12-item General Health Questionnaire be used to measure positive mental health? *Psychological Medicine*, 37, 1005–1013.
- Hudson, J. (2006). Institutional trust and subjective well-being across the EU. *Kyklos*, 59, 43–62.
- Huppert, F., & Whittington, J. E. (2003). Evidence for the independence of positive and negative well-being: Implications for quality of life assessment. *British Journal of Health Psychology*, 8, 107–122.
- Inglehart, R. (1996). The diminishing utility of economic growth: From maximizing security toward maximizing subjective well-being. *Critical Review*, 10, 509–531.
- Jonas, B. S., & Lando, J. F. (2000). Negative affect as a prospective risk factor for hypertension. *Psychosomatic Medicine*, 62, 188–196.
- Judge, T. A., Ilies, R., & Dimotakis, N. (2010). Are health and happiness the product of wisdom? The relationship of general mental ability to educational occupational attainment, health, and well-being. *Journal of Applied Psychology*, 95, 454–468.
- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology*, 83, 17–34.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376–407.
- Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. (2004). Toward national well-being accounts. *American Economic Review*, 94, 429–434.
- Kotakorpi, K., & Laamen, J. P. (2010). Welfare state and life satisfaction: Evidence from public health care. *Economica*, 77, 565–583.
- Krueger, A. B., & Schkade, D. A. (2008). The reliability of subjective well-being measures. *Journal of Public Economics*, 92, 1833–1845.
- Layard, R. (2010). Measuring subjective well-being. *Science*, 327, 534–535.
- Lester, D. (2002). National ratings of happiness, suicide, and homicide. *Psychological Reports*, 91, 758.
- Luechinger, S. (2009). Valuing air quality using the life satisfaction approach. *Economic Journal*, 119, 482–515.
- Luttmer, E. (2005). Neighbors as negatives: Relative earnings and well-being. *Quarterly Journal of Economics*, 120, 9631–002.
- Napier, J. L., & Jost, J. T. (2008). Why are conservatives happier than liberals? *Psychological Science*, 19, 565–572.
- Ng, Y. K. (1997). A case for happiness, cardinalism, and interpersonal comparability. *Economic Journal*, 107, 1848–1858.
- Offer, A. (2006). *The challenge of affluence: Self-control and well-being in the United States and Britain since 1950*. Oxford, UK: Oxford University Press.
- Ostroot, N. M., & Snyder, W. W. (1985). Measuring cultural bias in a cross-cultural study. *Social Indicators Research*, 17, 243–251.
- Oswald, A. J. (1997). Happiness and economic performance. *Economic Journal*, 107, 1815–1831.
- Oswald, A. J. (in press). Emotional prosperity and the Stiglitz Commission. *British Journal of Industrial Relations*.
- Oswald, A. J., & Powdthavee, N. (2007). Obesity, unhappiness, and the challenge of affluence: Theory and evidence. *Economic Journal*, 117, F441–F454.
- Oswald, A. J., & Wu, S. (2010). Objective confirmation of subjective measures of human well-being: Evidence from the USA. *Science*, 327, 576–579.
- Oswald, A. J., & Wu, S. (in press). Well-being across America. *Review of Economics and Statistics*.
- Pacek, A. C., & Radcliff, B. (2008). Welfare policy and subjective well-being across nations: An individual-level assessment. *Social Indicators Research*, 89, 179–191.
- Pfeffer, J. (2010). Building sustainable organizations: The human factor. *Academy of Management Perspectives*, 24, 34–45.

- Pittau, M. G., Zelli, R., & Gelman, A. (2010). Economic disparities and life satisfaction in European regions. *Social Indicators Research*, 96, 339–361.
- Powdthavee, N. (2005). Unhappiness and crime: Evidence from South Africa. *Economica*, 72, 531–547.
- Powdthavee, N. (2008). Putting a price tag on friends, relatives, and neighbours: Using surveys of life satisfaction to value social relationships. *Journal of Socio-Economics*, 37, 1459–1480.
- Powdthavee, N. (2010). *The happiness equation*. Duxford, UK: Icon Books.
- Radcliff, B. (2001). Politics, markets, and life satisfaction: The political economy of human happiness. *American Political Science Review*, 95, 939–952.
- Rehdanz, K., & Maddison, D. (2008). Local environmental quality and life satisfaction in Germany. *Ecological Economics*, 64, 787–797.
- Sacker, A., & Wiggins, R. D. (2002). Age-period-cohort effects on inequalities in psychological distress, 19812000. *Psychological Medicine*, 32, 977–990.
- Schyns, P. (2002). Wealth of nations, individual income and life satisfaction in 42 countries: A multilevel approach. *Social Indicators Research*, 60, 5–40.
- Seeman, T., Merkin, S. S., Crimmins, E., Koretz, B., Charette, S., & Karlamangla, A. (2008). Education, income, and ethnic differences in cumulative biological risk profiles in a national sample of US adults: NHANES III 19881994. *Social Science & Medicine*, 66, 72–87.
- Singh, I., & Rose, N. (2009). Biomarkers in psychiatry. *Nature*, 460, 202–207.
- Stack, S., & Eshelman, J. R. (1998). Marital status and happiness: A 17-nation study. *Journal of Marriage and the Family*, 60, 527–536.
- Steel, P., & Ones, D. S. (2002). Personality and happiness: A national-level analysis. *Journal of Personality and Social Psychology*, 83, 767–781.
- Steptoe, A., Wardle, J., & Marmot, M. (2005). Positive affect and health-related neuroendocrine, cardiovascular, and inflammatory processes. *Proceedings of the National Academy of Science of the United States of America*, 102, 6508–6512.
- Stevenson, B., & Wolfers, J. (2008). Economic growth and subjective well-being: Reassessing the Easterlin paradox. *Brookings Papers on Economic Activity*, Spring, 11–02.
- Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2009). *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Available from http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf
- Stone, A. A., Schwartz, J. E., Broderick, J. E., & Deaton, A. (2010). A snapshot of the age distribution of psychological well-being in the United States. *Proceedings of the National Academy of Sciences of the United States of America*, 107, 9985–9990.
- Van Praag, B., & Ferrer-I-Carbonell, A. (2004). *Happiness quantified: A satisfaction calculus approach*. Oxford, UK: Oxford University Press.
- Veenhoven, R. (1999). Quality of life in individualistic society. *Social Indicators Research*, 48, 157–186.
- Vemuri, A. W., & Constanza, R. (2006). The role of human, social, built, and natural capital in explaining life satisfaction at the country level: Toward a National Well-being Index (NWI). *Ecological Economics*, 58, 119–133.
- Welsch, H. (2006). Environment and happiness: Valuation of air pollution using life satisfaction data. *Ecological Economics*, 58, 801–813.
- Whiteley, P., Clarke, H. D., Sanders, D., & Stewart, M. C. (2010). Government performance and life satisfaction in contemporary Britain. *Journal of Politics*, 72, 733–746.
- Winkelmann, L., & Winkelmann, R. (2010). Does inequality harm the middle class? *Kyklos*, 63, 301–316.
- Wolfers, J. (2003). Is business cycle volatility costly? Evidence from surveys of well-being. *International Finance*, 6, 1–26.

Appendix

The Stiglitz Commission Report's Formal Recommendations (an abbreviated form of the list in the executive summary of the report)

- #1: When evaluating material well-being, look at income and consumption rather than production.
- #2: Emphasize the household perspective.
- #3: Consider income and consumption jointly with wealth.
- #4: Give more prominence to the distribution of income, consumption, and wealth.
- #5: Broaden income measures to non-market activities.
- #6: Quality of life depends on people's objective conditions and capabilities. Substantial effort should be devoted to developing and implementing robust, reliable measures of social connections, political voice, and insecurity that can be shown to predict life satisfaction.
- #7: Quality-of-life indicators in all the dimensions covered should assess inequalities in a comprehensive way.
- #8: Surveys should be designed to assess the links between various quality-of-life domains for each person, and this information should be used when designing policies in various fields.
- #9: Statistical offices should provide the information needed to aggregate across quality-of-life dimensions, allowing the construction of different indexes.
- #10: Measures of both objective and subjective well-being provide key information about people's quality of life. Statistical offices should incorporate questions to capture people's life evaluations, hedonic experiences, and priorities in their own survey.
- #11: Sustainability assessment requires a well-identified dashboard of indicators. The distinctive feature of the components of this dashboard should be that they are interpretable as variations of some underlying "stocks."
- #12: There is need for a clear indicator of our proximity to dangerous levels of environmental damage (such as associated with climate change or the depletion of fishing stocks).

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