

FEEDING THE ILLUSION OF GROWTH AND HAPPINESS:

A REPLY TO HAGERTY AND VEENHOVEN

Richard A. Easterlin

Running head: FEEDING THE ILLUSION OF GROWTH AND HAPPINESS

Date: April 2, 2004

FEEDING THE ILLUSION OF GROWTH AND HAPPINESS:

A REPLY TO HAGERTY AND VEENHOVEN

If your letter had praised everything of mine, I would not have been as pleased as I am by your attempt to disprove and reject certain points. I regard this as a mark of friendship and the other as one of adulation. But in return I ask you to listen with an open mind to my rebuttal. For what you say, if it were allowed to pass without any reply from me, would be too one-sided.

Letter from Leonardo Bruni to Thomas Cambiatiore, ca.1421

It is always a source of satisfaction to come across an article where one is cited often, especially by two scholars who have contributed so much to advance the study of subjective well-being. Of course, my happiness would have been greater had the references been favorable, rather than unfavorable. (Hereafter I use happiness and satisfaction interchangeably.)

I take it that the Hagerty-Veenhoven (hereafter H-V) article (2003) is a rebuttal of my 1995 paper (Easterlin 1995), because there is only one reference to time series results of studies by other scholars done in the almost 10-year period since publication of my article. Indeed, I believe I detect an echo of a similar critique by one of the authors of my 1974 article (cf. Easterlin 1974 and Veenhoven 1991; for comments on the latter, see Easterlin 2004 forthcoming).

Apparently the editor and referee(s) of this Journal also viewed the H-V paper as a comment on my 1995 article; otherwise it would be hard to explain the absence of the customary literature review and reconciliation of new and disparate results with those of prior work. It seems appropriate, therefore, to offer a few comments in response, especially since the conclusions of the H-V article will no doubt be cited often as substantially different from my own when, in fact, they are not.

I will focus on the time series analysis in the section “Descriptive Statistics of Happiness and Income” (pp. 11-18) which I take to be the heart of their article. Until one is sure about the data, methodology, and results of the time series analysis, hypothesis testing is superfluous.¹

THE UNITED STATES

I was quite surprised to find the one country whose data I thought I knew fairly well to be among the seven for whom a significant positive correlation is reported between happiness and income. I had found no significant relationship between happiness and time over a period in which GDP per capita grew by one-third, from 1972 to 1991 (Easterlin 1995, pp. 37-38). Charles Kenny (1999, pp. 14-15), based on a correlation of happiness with GDP per capita over the period 1952 to 1988, found a significant *negative* relationship in the United States. Blanchflower and Oswald in a paper referenced by H-V conclude from data spanning 1972 to 1998:

Reported levels of well-being have declined over the last quarter of a century in the U.S.; life satisfaction has run approximately flat through time in Britain.

These findings are consistent with the Easterlin hypothesis . . . (1999; the quote is from the Abstract of the forthcoming publication version.)

This paper is cited by H-V, but only with regard to cross sectional results, even though the title of the Blanchflower and Oswald article is “Well-Being over Time in Britain and the USA.”

Who is right about the United States? There is clearly no trend in the General Social Survey (GSS) data on happiness for the United States from 1972 to 2002 (Figure 1). These data are not significantly related to time or to real GDP per capita; the OLS regressions of happiness on time and real GDP per capita are as follows (t-statistics in parentheses):

$$(1) H = 2.21597 - .00069T, \text{ and} \\ (206.3) \quad (-1.03)$$

$$(2) H = 2.23252 - 1.05e^{-6}Y \\ (68.7) \quad (-0.81)$$

where H stands for mean happiness (scaled from 1=low, to 3), T stands for time (with 1972=0), and Y equals real GDP per capita in 1996 dollars.

Why do H-V conclude differently? Their data span a slightly shorter period, 1972-94, than those in Figure 1, but the shorter time span does not change the conclusions just stated. Rather, the reason for their result is that they include a number of non-GSS observations in the 1970s, and for most of these, reported happiness is less than in the GSS. The result is to tilt in a positive direction the horizontal regression line shown in Figure 1 and produce a significant positive correlation with GDP per capita.

What is startling is that H-V know this. In the last paragraph of their section “Descriptive Statistics of Happiness and Income,” they say:

[T]he U.S. displays a significant trend because of the low happiness scores in 1972-1974. These may in part be due to the social unrest caused by the Vietnam War, but *it may also be due to inclusion of surveys that are not comparable with the General Social Survey (GSS) time series.* These additional surveys in 1972-1974 contained identical wording of the happiness item, but sampling design and administration may have differed. *When these non-GSS surveys were deleted, no significant trend was found for the U.S.* (p. 18, emphasis added).

It is somewhat surprising that H-V did not pursue further the issue of comparability between the non-GSS and GSS surveys, given that inclusion of the non-GSS surveys makes an important difference in their own results and produces findings contrary to those of other analysts. To find the reason why the results are changed when the non-GSS surveys are included one need go no further than the article by Tom W. Smith (1979), that is the main source for the non-GSS surveys cited in the World Database of Happiness (Veenhoven 1993). The differences in survey results are not due to sampling design and administration; rather they arise from seasonal and context effects. (The GSS, for example, is conducted in the spring when happiness is at a seasonal high.) In Smith's article, after a characteristically painstaking examination of the data from 1972 to 1977, he concludes that "with controls for both season and context effects, it appears that happiness has been hovering around a constant level since 1972" (Smith, 1979, p. 29). It is clear that the non-GSS surveys are not comparable to the GSS, and putting the two sets of surveys together, as H-V do, leads to an erroneous conclusion about U.S. trends in happiness and their relationship to GDP per capita. Had there been a vetting of the data by H-V this mistake could have been avoided. It is not my task to

examine data comparability for the other countries in the H-V article, but the treatment of the United States leaves one uneasy.

EUROPE

I have not attempted a literature search, but it is my impression that for European countries as well as the United States, the results of recent studies are more like mine than H-V's.

My analysis of trends in life satisfaction in nine European countries was based on an article by Inglehart and Rabier (1986) that used the Euro-Barometer surveys. A study published four years ago by Inglehart and Klingemann (2000) extends the time span to 1998 (from 1973) and adds three more countries (Spain, Portugal, and Greece), bringing the total of European countries to one less than that in H-V. As in the earlier study the picture with regard to time trends in individual countries is mixed (p. 167, Figure 7.1). There is no formal statistical analysis, but the reading of the data by Inglehart and Klingemann is that "most publics show about the same level of well-being at the end of this twenty-five-year period as they did at the start" (p. 169).

In the same volume, Diener and Oishi, in the one recent paper cited by H-V, estimate the slope of life satisfaction in relation to GDP per capita in fifteen nations, thirteen of them in Europe (Diener and Oishi 2000). The data are from the World Database of Happiness and span a period apparently from 1965 to the early 1990s. The authors' report a significant positive relationship in 6 countries, no significant relationship in 6, and a significant negative relationship in 3 (5/5/3 for the European

nations alone). Their conclusion is that “the slopes across these societies are *on average* virtually flat, despite steep economic growth in most countries” (p. 202, emphasis added).

Blanchflower and Oswald in the paper previously mentioned report life satisfaction as a whole for twelve European nations (all in H-V) for 1973, 1983, and 1997, based on the Euro-Barometer surveys (1999, Appendix 3). Their conclusion is that “[t]he level of life satisfaction as a whole . . . appears to have been roughly constant over time” (p. 31).

Christoph and Noll (2003) draw on the Euro-Barometer surveys to present charts on life satisfaction from 1991 to 2000 in fifteen European countries (including the thirteen in H-V’s analysis) grouped into four clusters.² In each of the four clusters the consensus trend is horizontal or even slightly negative (p. 525, Figure 2).

In comparing their results with my 1995 study, H-V state:

Easterlin’s earlier claim was based on reports from 11 nations up to 1987. Five of these 11 nations now show significant *increases* in life satisfaction (U.S., The Netherlands, Germany, Italy, and Denmark), while only one shows a significant decline (Belgium). Hence the new data require substantial revision of Easterlin’s conclusion that no country showed significant trends in happiness (p. 14, emphasis in original).

Each sentence of this paragraph requires correction, though the first is a small matter – my analysis covered the period through 1989 for nine countries, and through 1991 for one. More importantly, while H-V say in the second sentence above that “[f]ive of these 11 nations now show significant increases in satisfaction . . .,” their own table shows significant increases in relation to GDP/capita only for four (Germany is not significant

in Table III, column 1).³ Moreover, if the U.S. is eliminated from the significant cases, as it should be, then one ends up with three significant positive cases versus one significant negative. Finally, with regard to the last sentence in the quotation, I did not say that “no country showed significant trends in happiness.” I reported significant positive trends in two countries and significant negative trends in two (p. 39, Figure 2). This compares with H-V’s three to one, out of 11 countries. Based on these corrections to H-V, and the studies of other scholars noted above, I think the evidence continues to support my generalization in the 1995 study: “The *overall* pattern . . . is clearly one of little or no trend . . . (p. 38, emphasis added).

DEVELOPING NATIONS

According to H-V, “Easterlin’s sample included only developed countries with medium to high GDP/capita” (p. 9). This is not correct. My analysis, as does H-V’s, included a times series for Japan starting in 1958, when Japan’s income level was quite low, “about one-eighth that of the United States in 1991” (Easterlin 1995, p. 38). In my article I compared Japan’s 1958 income level with 1991 income levels in countries of Asia, Africa, and Latin America, and pointed out that “in considering the experience of Japan, one is looking at a country advancing from an income level lower than or equal to those prevailing in a number of today’s developing countries” (p 39).

It is surprising that the authors neglect the low income level from which their data for Japan start, because in a figure previously published by one of the authors, Ruut Veenhoven, that includes developed and developing countries in the early 1960s, Japan clearly lies toward the lower income side of the diagram (Veenhoven, 1991, Exhibit I,

figure B). At the risk of seeming repetitious, let me try to make the point again, this time in terms of H-V's own data. H-V put nine countries in their low GDP/capita group (p. 10, Table II). Suppose one compares Japan's income level in 1958, the first year in H-V's analysis of Japan, with those in the nine countries of H-V's analysis in each of those country's initial year (e.g., with income in 1984 for Spain, 1985 for Portugal, etc.). For all but two of the nine countries, Japan's 1958 income level is substantially lower (Maddison 2001). It is four-tenths or less of the initial income levels in Spain, Portugal, and Greece, which raises some doubt about whether these European countries are properly classified as low income. Japan's 1958 income level is two-thirds to eight-tenths of the initial income levels in Brazil, Mexico, South Africa, and South Korea. Only in comparison with India and the Philippines is Japan's initial income level higher. Indeed, if one were to array all of the 21 countries in H-V's analysis from high to low based on income level in the year their happiness time series begins, Japan would be third from the bottom. I think this qualifies Japan as a legitimate member of the low, not high, income group.

H-V classify Japan as a high income country because they array countries on the basis of their GDP per capita at the end of the period of study, 1996. But Japan was not "high" or even "medium" income at the start of the study period, and this is precisely what makes Japan so interesting. There is no other country for which happiness data are available that traverses such a wide income range, from poor to rich (cf. Easterlin 2004, p. 6, figure 3). In their analysis of Japan, H-V find, as did I, that happiness was unchanged despite unprecedented growth in income.

Because this result is apparently unwelcome, H-V want to set Japan aside, either as developed (p. 10) or as an exception (p. 24). Japan's early years clearly fall in the developing, not developed, category, but is the pattern for Japan an exception? Besides Japan, H-V include six other countries outside of Europe. A few years ago I looked in the World Database of Happiness at the data through 1995 for five of these (Brazil, India, Mexico, Philippines, and South Korea), and found very few observations in which even the same question seemed to be asked. Moreover, the same question is no guarantee of comparability as is clear from the example of the United States. H-V do not do much better; extending the period by one year they report observations for these countries ranging in number from three to five. Based on these fragmentary data, and adding South Africa (n=7), they find a statistically significant positive relationship between life satisfaction and GDP per capita in only one of six countries, South Korea. To my mind this result does not make Japan an exception. Rather, South Korea, the country with the statistically significant positive relation, is the exception.

Let me add, however, that in dealing with these countries I would feel more comfortable if country specialists who know the data well were involved in the analysis. In this respect the careful studies of South Africa by Valerie Møller and her collaborators provide a model (Møller 2001, Møller and Dickow, 2002).

H-V'S FINDINGS

Let me turn to the authors' interpretation of their time series results, which are summarized as follows:

The first column [of Table III] presents the contemporaneous correlation between national happiness and national wealth for each nation. It shows that wealth is positively correlated with happiness for 14 of the 21 countries, and that only 1 of the 21 countries had a significant negative correlation – Belgium. In contrast, 7 of the 21 countries show significant positive correlation with wealth. This column shows that most countries display a positive relation between national income and happiness (p. 12).

There is a simple statistical issue raised by this paragraph – does one generalize simply from the signs of the correlation coefficients (14 of 21 positive) or the signs of *significant* correlation coefficients (7 of 21 positive). One would have thought the professional consensus is that the correct answer is “the signs of significant coefficients” and that to test the hypothesis “Greater happiness goes with greater national income,” one would look for statistically significant relationships. In the belief that this is the methodologically correct procedure, I tabulate in Table I, as a test of the hypothesis, the results of H-V, Table III, column 1 for their three groups of countries, revising the result for the United States, but assuming the others are correct. The hypothesis is rejected in 15 of 21 cases, which makes me feel, as far as H-V’s evidence goes, that I would not want to put my money on the authors’ assertion that “happiness . . . can be raised by growth in national income” (p. 24). Even if the data other than for the U.S. are accepted, this statement is consistent with the results for less than one country out of three.

If concerns about small numbers of observations for some countries and data comparability are set aside (a big “if”), it is noteworthy too that in H-V’s low income group the proportion of counties with a significant positive coefficient is the least (two

out of nine). If the effect on happiness of income growth is greatest at low income levels, as they seem to believe (p. 22), one would expect a better showing for this group relative to the medium and higher income groups.

There is a more substantive issue at stake, however, than the question of statistical significance. Even for the significant cases, the real issue is whether the growth of GDP per capita *caused* the change in happiness, as H-V would seemingly have us believe.

In considering the question of causation it seems reasonable to start by asking how many more economic goods, on average, did each country's population benefit from over the period under study? To answer this, Table II presents data on the percentage rate per decade at which the goods available grew (column 1), and, because the periods spanned by the happiness data differ among countries, the total increase in the supply of goods over the entire data period spanned for each country (column 3). In the table the countries with a significant positive relation to GDP per capita are underscored; Belgium, with a significant negative relation, is in italics.

In the five countries at the bottom of the table (group D) income growth is low or negative, and there are no significant cases, positive or negative. Group C is more interesting. It consists of eight countries whose economic growth rates are very similar over periods spanning more than two decades. In these countries the amount of goods on hand increased by around 40 to 60 percent. Three countries have a significant positive relation of happiness to GDP/capita; one, a significant negative relationship, and in four there is no significant relationship. If greater income *does* cause greater happiness, why these happiness differences among countries whose economic performance is so similar?

It seems highly doubtful that the happiness differences can be ascribed to differences in the growth of national income.

Group B poses a similar question: If one is to credit Portugal's significant positive relation to the increase in its national income, what about the other four countries? Note that Ireland and Norway maintained a growth rate like Portugal's for more than twice as long, doubling the goods on hand, but they do not yield a happiness result like Portugal's.

Finally, Group A comprises two countries with astoundingly high rates of growth – Japan's maintained over almost 4 decades, South Korea's over almost two. If one attributes South Korea's happiness performance to its almost 200 percent increase in goods available, why doesn't Japan's more than 500 percent increase over a period more than twice as long leave a mark on happiness?

In sum, H-V find that if happiness is correlated with real GDP/capita in each of 21 countries for periods ranging from 11 to 38 years, then a significant positive relationship is found in six. I have shown, however, that if five of these six countries are compared with others with quite similar growth rates of national income, their happiness trends appear to be the exception, not the rule.⁴ Assuming the data are credible, it seems reasonable to infer that since income growth is so similar, other factors are responsible for the disparate changes in happiness in these countries. Possibly, a comparative historical analysis might provide insight into the factors responsible for their differential trends in happiness.⁵ If, for example, in Group C Denmark and the Netherlands really do have happiness trends *over time* that are significantly positive, while their neighbors in the European Union with very similar levels and trends in GDP/capita do not, what are the circumstances that differentiate Denmark and the Netherlands from their neighbors?

How, for example, do the various members of this EU group of countries compare with regard to trends in family life, health, and work, all of which are important in affecting individual happiness? Are there public policy differences among these countries with regard, say, to support for the aged and provisions of health care, that reduce individual anxieties? These are the questions, it seems to me, that need to be investigated.

SUMMARY AND IMPLICATIONS

Let me summarize some of the main points:

1. The United States experience does not support H-V's assertion that "happiness . . . can be raised by growth in national income" (p. 24). H-V's result arises from mixing together two sets of noncomparable surveys.
2. The results of studies by other scholars of European countries and of the United States do not support their claim either.
3. Nor does the experience of non-European countries support their claim. H-V treat Japan as developed and/or an exception. But if H-V's countries are ranked from high to low in terms of income level in the year when each country's happiness series starts, Japan is third from the bottom out of 20 countries. There is no significant relation of happiness to GDP/capita in Japan, and, to judge from H-V's own results, this finding is typical of non-European countries, not an exception.
4. If national income is really generating a growth in happiness, why is it that countries with quite similar rates of economic growth have quite disparate trends in happiness, and that significant positive cases tend to be the exception, not the rule in countries with similar economic growth?

In conclusion, let me touch on the motivation for H-V's article, as set forth in their Introduction:

It is worrisome that Easterlin's work has been accepted so easily, since he himself warned that his data were few and unreliable It is particularly worrisome because accepting the conclusion that economic growth has no effect on happiness would have sweeping implications for national policy, suggesting that *a focus on economic growth will not benefit the long-run happiness of citizens* (pp. 2-3, emphasis added).

It is surprising to learn that my conclusions have been accepted, let alone "easily." I keep company with economists and I can assure H-V that there is very little doubt among my colleagues that focusing on economic growth will increase well-being, evidence to the contrary notwithstanding. Since economics is the most influential social science in public policy formation, and promises to be so for some time, I think H-V can safely put their anxieties aside.

Nevertheless it is true that my results, along with mounting evidence from other time series studies of subjective well-being, do on balance undermine the view that a focus on economic growth is in the best interests of society. The research implications that I draw from this conclusion, however, are somewhat different from H-V. Instead of straining to feed the illusion that a focus on growth creates happiness, one needs to develop an empirically tested causal model that includes the life satisfaction derived from multiple sources – not just material goods, but also family life, health, work utility, and the like (Easterlin 2003). A better understanding of the causes of happiness will provide a more secure foundation for policy recommendations. It may be that in the policy arena

economic growth will ultimately turn out to have a positive role to play, but based on the evidence to date it would be surprising if the outcome of such a model were support for the “focus on economic growth” to which nations everywhere, along with H-V, seemingly subscribe.

ACKNOWLEDGEMENTS

I am grateful for the excellent assistance of Donna Hokoda Ebata and Pouyan Mashayekh-Ahangarani. Financial support was provided by the University of Southern California. The epigraph is from Griffiths (2003, p. 352).

NOTES

¹ The only published comment on H-V with which I am familiar is the following brief observation by Johannes Hirata (2003, 13) in a broad survey of the literature on happiness and income: “While their data do show a positive long term effect [of income on happiness], the presentation of the data is selective, and some results seem to be wrong due to scaling or calculation errors” (cf. also, fn. 11, pp. 13-14).

² Nordic (Denmark, Finland, and Sweden); Central A (Austria, Belgium, France, Germany, Luxembourg, and Netherlands); Central B (Ireland and the United Kingdom); and Southern (Italy, Greece, Portugal, and Spain).

³ There is a puzzling contradiction between H-V’s Table III and Figure 2. The figure is labeled “Happiness in 9 countries that showed significant correlations with GDP/capita,” and the text relating to the figure treats all nine as significant. But according to Table III, neither Germany nor Greece, both included in Figure 2, are significant. Schyns (2003, p.

94) concludes that in Germany “mean satisfaction scores were quite stable” from 1984 to 1996. The time series for general satisfaction from 1991 to 2000 for both East and West Germany in Christoph and Noll (2004 forthcoming, p. 5) are also stable or declining.

⁴ Table II omits one of the six, Luxembourg (a country whose population is less than half a million), because national income data are not given in the source I used.

⁵ Ottar Hellevik’s thoughtful study of Norway, though not comparative, is a step in the right direction (Hellevik 2003).

CAPTIONS

Fig. 1. Happiness and Real GDP per Capita, United States, 1972-2002

REFERENCES

- Blanchflower, D.G. and A.J. Oswald: 1999. 'Well-Being Over Time in Britain and the USA,' National Bureau of Economic Research Working Paper 7487. Forthcoming in *Journal of Public Economics*, 2004, 88, pp. 1359-1386.
- Christoph, Bernhard and Heinz-Herbert Noll: 2003. 'Subjective Well-Being in the European Union during the 90s,' *Social Indicators Research* 64, pp. 521-546.
- Davis, James Allan and Tom W. Smith: 2002. *General Social Surveys, 1972-2002* [machine-readable data file]. Chicago: National Opinion Research Center.
- Diener, Ed and Shigehiro Oishi: 2000. 'Money and Happiness: Income and Subjective Well-being across Nations,' in Ed Diener and Eunkook M. Suh (eds.), *Culture and Subjective Well-being*, Cambridge, MA: The MIT Press, pp. 185-218.
- Easterlin, Richard A.: 1974. 'Does Economic Growth Improve the Human Lot?' in Paul A. David and Melvin W. Reder, eds., *Nations and Households in Economic Growth: Essays in Honor of Moses Abramovitz*, New York: Academic Press, Inc.
- Easterlin, Richard A.: 1995. 'Will Raising the Incomes of All Increase the Happiness of All?' *Journal of Economic Behavior and Organization*, 27(1), (June), pp. 35-48.
- Easterlin, Richard A.: 2003. 'Explaining Happiness,' *Proceedings of the National Academy of Sciences*, 100(19), (September 16), pp. 11176-11183. A substantially expanded version is forthcoming under the title "Building a Better Theory of Well-Being" in Luigino Bruni and Pierluigi Porta, eds., *Economics and Happiness: Reality and Paradoxes*. Oxford, Eng.: Oxford University Press, forthcoming.

Easterlin, Richard A.: 2004 forthcoming. 'Diminishing Marginal Utility of Income? Caveat Emptor,' Social Indicators Research.

Griffiths, Gordon: 2003. 'Letter from Bruni to Thomas Cambiatiore,' Journal of European Economic History 32(2), (Fall), pp. 352-359.

Hagerty, Michael R. and Ruut Veenhoven: 2003. 'Wealth and Happiness Revisited – Growing National Income *Does* Go with Greater Happiness,' Social Indicators Research, 64, pp. 1-27.

Hellevik, Ottar: 2003. 'Economy, Values and Happiness in Norway,' Journal of Happiness Studies, 4, pp. 243-283.

Hirata, Johannes: 2003. Happiness and Economics: Some Ethical Considerations. St. Gallen, Switzerland: Institute for Business Ethics, University of St. Gallen.

Inglehart, Ronald and Hans-Dieter Klingemann: 2000. 'Genes, Culture, Democracy, and Happiness,' in Ed Diener and Eunkook M. Suh (eds.), Culture and Subjective Well-being, Cambridge, MA: The MIT Press, pp. 165-183.

Inglehart, Ronald and Jacques-Rene Rabier: 1986. 'Aspirations Adapt to Situations – But Why are the Belgians So Much Happier than the French?' In Frank M. Andrews (ed.), Research on the Quality of Life, Ann Arbor, MI: Inter-University Consortium for Political and Social Research, University of Michigan, pp. 1-56.

Kenny, Charles: 1999. 'Does Growth Cause Happiness, or Does Happiness Cause Growth?' Kyklos, 52(1), pp. 3-26.

Maddison, Angus: 2001. The World Economy: A Millennial Perspective. Paris, France: Development Centre of the Organization for Economic Co-operation and Development.

Møller, Valerie: 2001. 'Happiness Trends under Democracy: Where Will the New South African Set-Level Come to Rest?' *Journal of Happiness Studies*, 2, pp. 33-53.

Møller, Valerie and Helga Dickow: 2002. 'The Role of Quality of Life Surveys in Managing Change in Democratic Transitions: The South African Case,' *Social Indicators Research* 58, pp. 267-292.

Schyns, Peggy: 2003. *Income and Life Satisfaction: A Cross-National and Longitudinal Study*. Delft, Netherlands: Eburon.

Smith, Tom W.:1979. 'Happiness: Time Trends, Seasonal Variations, Intersurvey Differences, and Other Mysteries,' *Social Psychology Quarterly*, 42(1), pp. 18-30.

U.S. Bureau of the Census: 2003. *Statistical Abstract of the United States 2003*. Washington, D.C.: Government Printing Office.

Veenhoven, Ruut: 1991. 'Is Happiness Relative?' *Social Indicators Research*, 24, pp. 1-34.

Veenhoven, Ruut 1993. *Happiness in Nations, Subjective Appreciation of Life in 56 Nations 1946-1992*, Rotterdam: Erasmus University.

University of Southern California

College of Letters, Arts, and Sciences

Los Angeles, CA 90089-0253

USA

Email: easterl@usc.edu

Fig. 1. Happiness and Real GDP per Capita, United States, 1972-2002

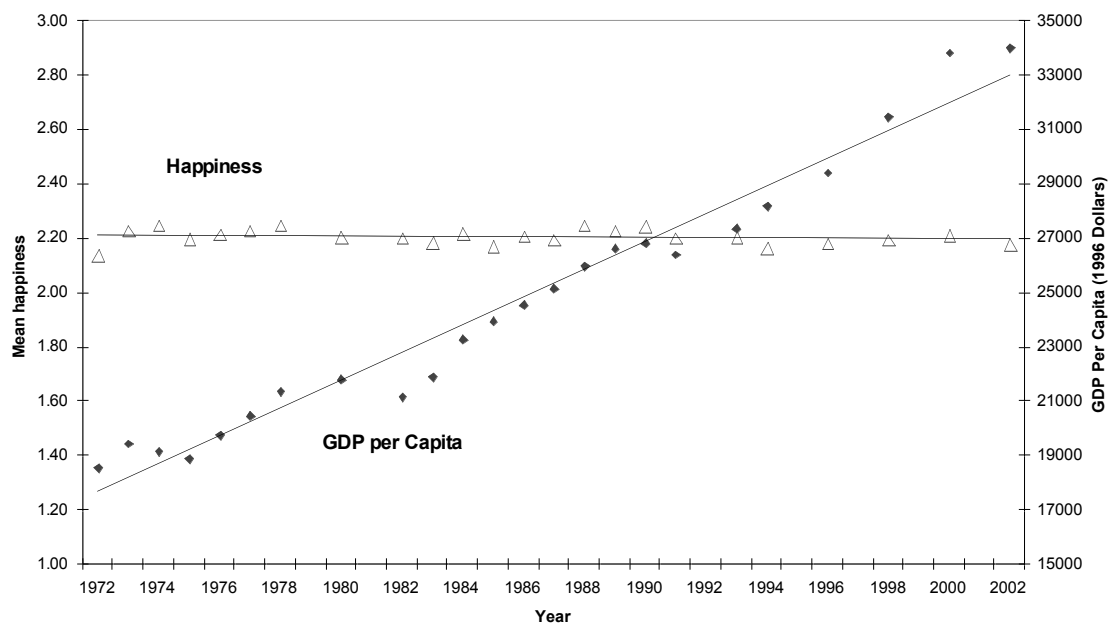


TABLE I

H-V's Correlations of Happiness with GDP/capita for 21 Countries
Classified by Significance and Level of Country's Development in 1996

Level of development	Number of countries	Significant coefficient		
		Positive	None	Negative
High GDP per capita	5	2	3	0
Medium GDP per capita	7	2	4	1
Low GDP per capita	9	2	7	0
Total	21	6	14	1

Source: Hagerty and Veenhoven (2003), p. 13.

TABLE II

Growth of Real GDP per Capita in 20 Nations in H-V's Analysis*

Country	(1) Real GDP <u>per capita</u> Increase per decade (%)	(2) Number of decades spanned by <u>happiness data</u>	(3) <u>Real GDP per capita</u> Total increase over period (%)
A. <u>South Korea</u>	88	1.7	193
Japan	63	3.8	533
B. Ireland	42	2.3	125
<u>Portugal</u>	42	1.1	48
Norway	36	2.4	107
India	33	2.1	82
Spain	29	1.2	35
C. <u>Italy</u>	23	2.3	63
United States	22	2.2	53
<i>Belgium</i>	20	2.3	51
<u>Denmark</u>	20	2.3	51
United Kingdom	18	2.3	48
<u>Netherlands</u>	17	2.3	45
Germany	17	2.3	44
France	16	2.3	42
D. Greece	13	1.5	19
Brazil	13	2.1	29
Mexico	9	2.1	20
Philippines	-1	1.7	-2
So. Africa	-9	1.5	-14

Source: Maddison (2001).

*Arrayed from high to low by rate of growth in column 1. No data are given for Luxembourg in the source. Countries in H-V with a significant positive relation of happiness to GDP per capita are identified by underscoring; with a significant negative relationship, italics.