ELSEVIER

Journal of Economic Behavior and Organization
Vol. 27 (1995) 35–47

JOURNAL OF
Economic Behavior
& Organization

Will raising the incomes of all increase the happiness of all?

Richard A. Easterlin

University of Southern California, Los Angeles, CA 90089-0253, USA

Received 10 January 1994; revised 22 September 1994

Abstract

Today, as in the past, within a country at a given time those with higher incomes are, on average, happier. However, raising the incomes of all does not increase the happiness of all. This is because the material norms on which judgments of well-being are based increase in the same proportion as the actual income of the society. These conclusions are suggested by data on reported happiness, material norms, and income collected in surveys in a number of countries over the past half century.

Keywords: Happiness; Welfare; Aspirations

JEL classification: D60

Will raising the incomes of all increase the happiness of all? The answer to this question can now be given with somewhat greater assurance than twenty years ago (Easterlin, 1973; Easterlin, 1974). It is 'no'. The following gives a brief summary of the model and evidence.

1. Model

A simple thought experiment may convey the basic reasoning. Imagine that your income increases substantially while everyone else's stays the same. Would you feel better off? The answer most people would give is 'yes'. Now suppose

SSDI 0167-2681(95)00003-8

that your income stays the same while everyone else's increases substantially. How would you feel? Most people would say that they feel less well off. This is because judgments of personal well-being are made by comparing one's objective status with a subjective living level norm, which is significantly influenced by the average level of living of the society as a whole. If living levels increase generally, subjective living level norms rise. The individual whose income is unchanged will feel poorer, even though his or her objective circumstances are the same as before. Karl Marx put it this way: 'A house may be large or small; as long as the surrounding houses are equally small it satisfies all social demands for a dwelling. But if a palace rises beside the little house, the little house shrinks into a hut' (as quoted in Lipset, 1960, p. 63).

Put generally, happiness, or subjective well-being, varies directly with one's own income and inversely with the incomes of others. Raising the incomes of all does not increase the happiness of all, because the positive effect of higher income on subjective well-being is offset by the negative effect of higher living level norms brought about by the growth in incomes generally.

Formally, this model corresponds to a model of interdependent preferences in which each individual's utility or subjective well-being varies directly with his or her own income and inversely with the average income of others (cf. Duesenberry, 1949, Pollak, 1976). [1] At any point in time average income is given; and happiness varies directly with individual income. Over time, however, a general increase in individual incomes raises the societal average. The increase in happiness that one might have expected based on the growth in individual incomes is offset by a decrease in happiness due to the rise in the average, yielding, on balance, no net growth in well-being.

Although this model generates paradoxical cross-sectional and time series relationships between happiness and income of the type actually observed, a more realistic model would, in addition, take account of habit formation, in which the utility one attaches to one's current income level depends also on one's past income (Modigliani, 1949, Pollak, 1970, Day, 1986). [2] Many of those with higher incomes come from higher income backgrounds, and conversely for those with lower incomes. The difference in living level experience implied by the difference

[1] Similar theoretical reasoning is found outside of economics in studies of relative deprivation and reference groups (cf. Hyman, 1968).

[2] The habit formation model accords closely with Helson's (1964) adaptation level theory in psychology of how judgments are formed. Put succinctly: "The most general principle of adaptation level theory is that people's judgments of current levels of stimulation depend on whether this stimulation exceeds or falls short of the level of stimulation to which their previous history has accustomed them" (Brickman and Coates, 1978, p. 918). A number of ingenious experimental studies in social psychology have provided empirical support for this proposition (Brickman and Campbell, 1971; Diener, 1984).

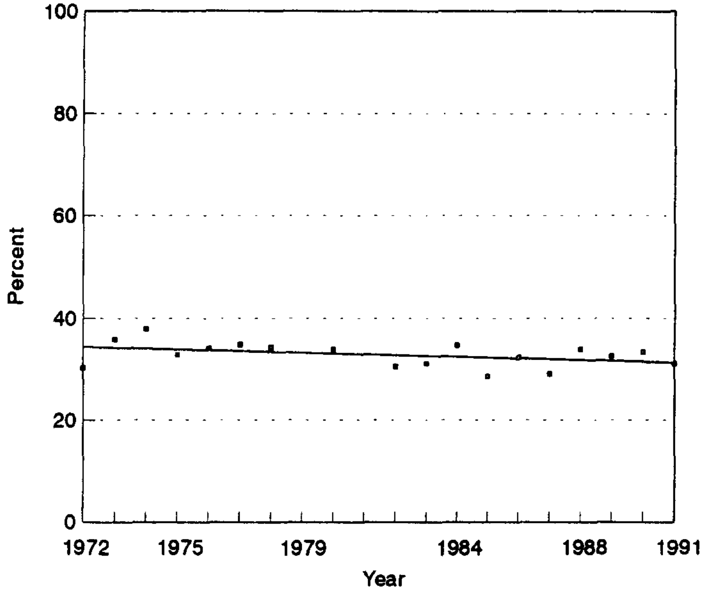
in income history might be expected to give rise to similar differences in living level norms –higher norms for the affluent and lower norms for the poor. Indeed, if habit formation alone shaped norms, one might arrive at a dispersion in norms in direct proportion to the dispersion in income, and no significant income-happiness relationship even in the cross-section. With the more realistic assumption of habit formation plus interdependent preferences, however, the dispersion in norms is less than that in income, because norms at all income levels are pulled toward the income average. The result is a positive happiness-income relationship in the cross-section, but one weaker than that which would prevail in the absence of habit formation.

2. Evidence [3]

The evidence that income growth in a society does not increase happiness comes from time series studies of the United States, nine European countries, and Japan. For the United States, on which the most work has been done, the most comprehensive studies of historical experience are those of Smith (1979) and Campbell (1981, ch. 3). In a detailed analysis of data from 45 happiness surveys taken between 1946 and 1977, Smith arrives at the same conclusion as Easterlin (1974), that there is a swing in American happiness with a peak in the late 1950s, but little indication of a trend. The absence of a trend in happiness is noted also by Campbell, and extended by him to include questions on general life satisfaction. Campbell also points out that movements in happiness sometimes occur in direct opposition to what one would have expected based on economic trends (1981, pp. 29-30). Drawing on a small area survey, O.D. Duncan (1975) reports that 'there was no change in the distribution of satisfaction with the standard of living among Detroit area wives between 1955 and 1971, although... constant dollar [median family] income increased by forty percent.'

These studies cover the post-World War II period through the 1970s. What of experience since then? The answer is, again, no trend in happiness. The evidence for this is annual data from the General Social Survey from the year when the survey was initiated, 1972, through 1991 (Fig. 1). In this period, real per capita disposable income rose by a third (Economic Report of the President, 1993). Together with the results for the earlier part of the post-World War II period, the

[3] Issues in the measurement of subjective well-being are discussed in Easterlin (1974). Diener (1984) provides a valuable survey including more recent work on both measurement and theory. The general assessment is that measures of the type used here have substantive meaning in terms of subjective welfare.



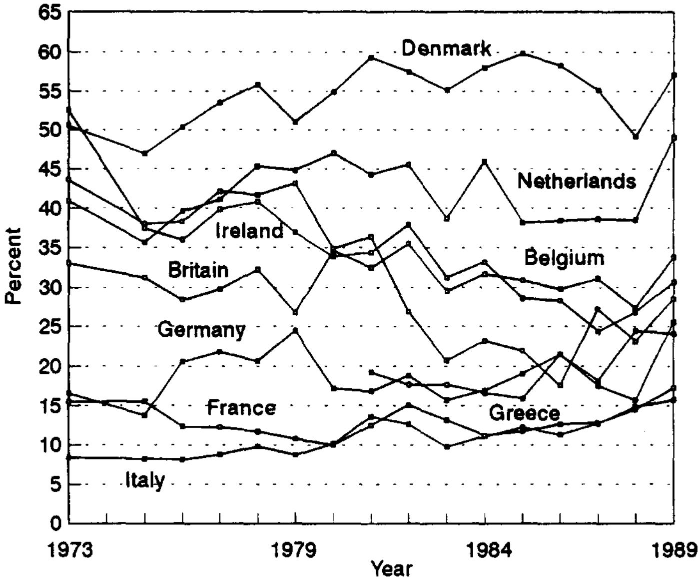
Source and notes: National Opinion Research Center, 1991. The question is, "Taken all together, how would you say things are these days -- would you say that you are very happy, pretty happy, or not too happy?" An ordinary least squares regression line is fitted to the data; the time trend is not statistically significant.

Fig. 1. Percent very happy, United States, 1972–1991.

conclusion is that there has been no improvement in happiness in the United States over almost a half century in which real GDP per capita more than doubled (Maddison, 1991).

Trends in life satisfaction in nine European countries from 1973 to 1989 are much like that just reported for happiness in the United States (Fig. 2; for a similar figure for happiness in these countries covering a somewhat shorter period, see Inglehart and Rabier, 1986, pp. 49). Satisfaction drifts upward in some countries, downward in others. The overall pattern, however, is clearly one of little or no trend in a period when real GDP per capita rises in all of these countries from 25 to 50 percent (OECD, 1992).

The experience of Japan after recovery from World War II is of special interest, because it encompasses much lower levels of income than those of the United States and Europe. The best historical estimates of real GDP per capita put Japan's living level in 1958 at only about one-eighth that of the United States in 1991 (Summers and Heston, 1991, updated by personal correspondence). In 1991 in Third World areas other than Africa a number of countries already equalled or exceeded Japan's 1958 income level:



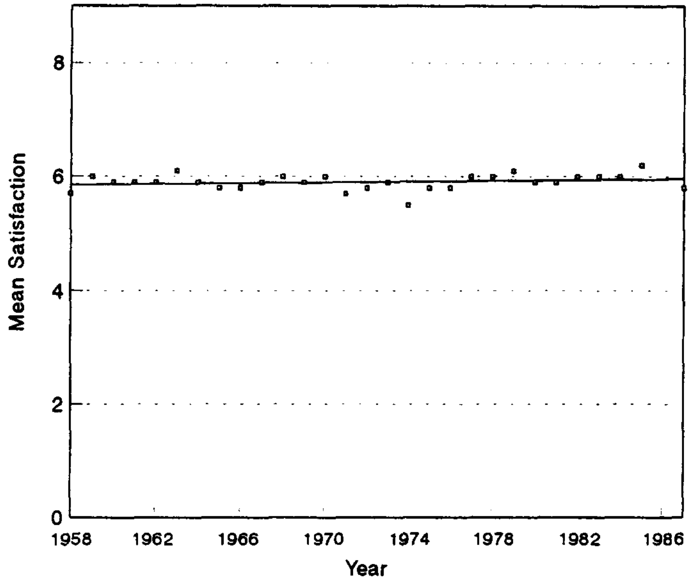
Source and notes: Inglehart et al. 1992. The question asked is, "Generally speaking, how satisfied are you with your life as a whole? Would you say that you are very satisfied, fairly satisfied, not very satisfied, or not at all satisfied?" Ordinary least squares regressions (not shown) yielded time trends that were not significant for five countries, significant and positive for two, and significant and negative for two.

Fig. 2. Percent very satisfied with their lives in general, nine European countries, 1973–1989.

	Number of countries with estimates for 1991	Number of countries equal to or higher than Japan in 1958
Asia (excluding Japan)	24	16
Latin America and Caribbean	24	15
Africa	43	11

Hence, 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 considerable number of today's developing countries.

Between 1958 and 1987 real per capita income in Japan multiplied a staggering five-fold, propelling Japan to a living level equal to about two-thirds that of the United States (Summers and Heston, 1991). Consumer durables such as electric washing machines, electric refrigerators, and television sets, found in few homes at the start of the period, became well-nigh universal, and car ownership soared



Source and notes: Veenhoven, 1993. An ordinary least squares regression is fitted to the data; the coefficient of mean satisfaction on year is not statistically significant.

Fig. 3. Mean subjective well-being, Japan 1958–1987.

from 1 to about 60 percent of households (Yasuba, 1991). Despite this unprecedented three decade advance in level of living, there was no improvement in mean subjective well-being (Fig. 3; cf. also Inglehart and Rabier, 1986, p. 44).

When Japan's population near the start of this period is classified into three income groups, average happiness in the highest group is substantially greater than in the lowest (Easterlin, 1974, Table 5). Given the remarkable growth of incomes that occurred, the proportion of the population at the end of the period with incomes equalling or exceeding that of the highest group at the beginning must have risen substantially. Yet the average level of satisfaction was unchanged.

Some scholars of subjective well-being argue that the relation of subjective well-being to income is curvilinear –that it may be nil in richer countries, but that it is positive in poorer countries, although no time series evidence to this effect has been presented (Inkeles, 1993; Veenhoven, 1991). Presumably a positive relation will be observed in poorer countries as the population is freed from subsistence level needs for food, clothing, and shelter. In 1958, Japan was beyond this stage, as are a number of Third World countries today. Yet the magnitude of Japan's subsequent advance in living levels does encompass a transformation from a 'subsistence level' of consumer durables to plenitude, with no impact on subjective well-being. One would suspect that the spread of consumer durables among the Japanese must have involved widespread satisfaction of perceived needs. The total absence of any subjective welfare effect would seem to raise doubts about the hypothesized curvilinear relationship.

There is also evidence relating to norms that supports the notion that higher incomes do not lead to greater happiness because material aspirations increase with a society's income. In an international inquiry into people's hopes and fears, social psychologist Hadley Cantril asked an open-ended question on what was needed to make the respondent 'completely happy.' After comparing responses of those in rich countries with those in poor, he concluded that

> [p]eople in highly developed nations have obviously acquired a wide range of aspirations, sophisticated and expensive from the point of view of people in less-developed areas, who have not yet learned all that is potentially available to people in more advanced societies and whose aspirations concerning the social and material aspects of life are modest indeed by comparison (Cantril, 1965, p. 202).

Time series comparisons yield similar results. When Americans are asked to think about the 'good life –the life you'd like to have,' the proportion identifying goods such as 'really nice clothes' and 'a vacation home' as essentials of the good life is considerably higher in 1988 than in 1975 (Easterlin and Crimmins, 1991, p. 526). Perhaps most important are findings indicating that material norms and income increase, not only in the same direction, but at the same rate. Thus, 'minimum comfort' budgets of New York city workers in this century 'have generally been about one-half of real gross national product per capita' (Smolensky, 1965, p. 40). Similarly, Rainwater (1990) concludes that the income perceived as necessary to get along rose between 1950 and 1986 in the same proportion as actual per capita income.

Theoretical expectations of a positive within-country relationship between happiness and income are also supported by the data. A survey article summarizes as follows:

> There is an overwhelming amount of evidence that shows a positive relationship between income and SWB [subjective well-being] within countries... This relationship exists even when other variables such as education are controlled... Although the effect of income is often small when other factors are controlled, these other factors may be ones through which income could produce its effects... (Diener, 1984, p. 553; see also Andrews, 1986, p. xi; for a seemingly contrary reading of the literature, see Lane, 1993).

As mentioned, the expectation of a positive happiness-income relation within a society assumes that the dispersion in material norms is less than that in actual incomes, although the two are positively related. Rainwater's analysis of perceptions of 'get along' income supports this view of the dispersion in norms. He concludes that there is

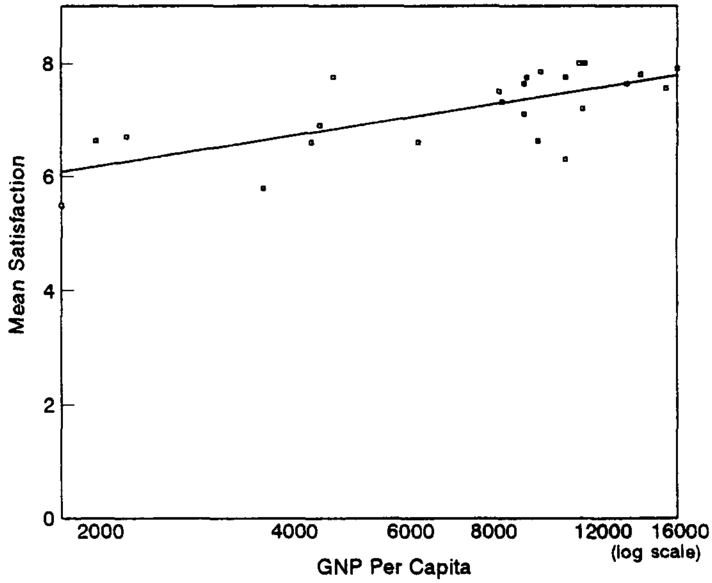
> a rather high degree of consensus about perceived living levels in society. Even high income people do not exaggerate very much the needed income of [a family of four].... The same conclusion can be drawn from the two studies which ask about a wider range of living levels from poor to rich [those by Rainwater, 1974 and Dubnoff, 1985] (Rainwater, 1990, p. 11).

What of point of time comparisons among countries at different levels of income? On this, the theoretical expectation is uncertain. At one extreme, one might imagine a replication of the within-country situation – a substantial convergence in norms between rich and poor resulting in a positive happiness-income relation. At the other extreme, one might suppose that norms would vary in direct proportion to actual income, resulting in no significant association between happiness and income. Put differently, the expected happiness-income relation in international cross-sections would depend on the extent to which trans-national material norms have come to prevail throughout the world.

There is considerable agreement among scholars involved in international comparisons that material aspirations vary positively with the level of economic development. [4] However, the dispersion in norms appears to be, on average, less than that in incomes, because a positive happiness-income relationship typically turns up in international comparisons (Fig. 4, see also Cantril, 1965, Gallup, 1976–77, Inkeles, 1993, Inkeles and Diamond, 1980). [5] It would be of interest to assess the size of the cross-sectional income-happiness relation among countries relative to that found within countries. This undertaking is complicated, however, by the now well-established finding that bivariate international comparisons of happiness and income are significantly influenced by cultural factors. For example, the substantial stability in the relative positions of the nine European countries throughout the period shown in Fig. 2 is taken in the study in which a similar figure originally appeared to indicate a 'durable cultural component' that varies by country in reports on subjective well-being (Inglehart, 1988, p. 1207; see also Inglehart and Rabier, 1986). Inkeles (1993, p. 12) states it as follows: '... [N]ational groups display a response propensity –evidently an aspect of their cultural

[4] See Cantril (1965), the "aspiration-adjustment model" in Inglehart and Rabier (1986), and Inkeles (1993, p. 10).

[5] An interesting study by Morawetz (1977) of two Israeli settlements concludes that the distribution of income may influence self-rated happiness. However, this does not appear to be true of the seventeen countries in Fig. 4 for which income distribution data are available (World Bank, 1990). Happiness and income distribution are not significantly related in either a bivariate regression or a multivariate regression with GNP per capita.



Source: From Inglehart 1988, based on Euro-Barometer surveys. Eighteen European countries are included plus the United States, Canada, Australia, Japan, Argentina, and the Union of South Africa. An ordinary least squares regression is fitted to the data; the coefficient of satisfaction on GNP per capita is statistically significant.

Fig. 4. Mean satisfaction with life in general and real gross national product per capita, twenty-four countries, 1984.

orientation –to see most things either in a positive or negative light.' [6] These observations on cultural influences on international happiness comparisons underscore the importance of national time series evidence, such as that emphasized

[6] Some evidence from international comparisons suggests that cultural influences may also operate in a way observed in United States data. An analysis of survey responses for blacks and whites in the United States indicates that blacks have a tendency to choose more extreme response categories (Bachman and O'Malley, 1984). This is not a matter of blacks being consistently more positive or more negative, but simply of their preferring a more extreme response (or alternatively, of whites preferring a less extreme one). A possible illustration of this response pattern appears in Inkeles, 1993, p. 11. On each of six indicators of positive subjective circumstances ("generally very happy," "very satisfied with standard of living," etc.), Brazil is highest or close to highest of the eight geographic areas compared. On four indicators relating to negative circumstances ("worry a lot," "not able to meet expenses,") Brazil is the worst on every one. How could Brazilians be so happy, and at the same time, so anxious and financially insecure? The answer may be that when asked about their feelings, Brazilians tend to put things in more extreme fashion than those in the other areas studied.

here, for inferring the relationship between subjective well-being and economic development. [7]

3. Conclusion

Today, as in the past, within a country at a given time those with higher incomes are, on average, happier. However, raising the incomes of all does not increase the happiness of all. This is because the material norms on which judgments of well-being are based increase in the same proportion as the actual income of the society.

Although the evidence in support of these conclusions continues to grow, there is need for more work. Despite the fact that time series studies are crucial to the question of how subjective well-being and economic development are related, surprisingly little analysis of this type has been done, especially in poorer countries. Moreover, happiness does sometimes rise or fall over time, and these movements deserve study. There is also need for more empirical work on how material norms change with the level of economic development, and the mechanisms shaping such norms. Finally, there is need to develop international cross-sections of the happiness-income relationship that are free of cultural biases. In all of this work, attention should be given to possible causal factors additional to the level of real per capita income, the focus of the present study. Clearly, major political events (war, political turmoil, revolution) may influence happiness (Easterlin, 1974).

In a survey done by Diener (1984) of well over 200 studies on the measurement and determinants of subjective well-being only two references appear to articles in economics journals. With a few exceptions (Abramovitz, 1979; Frank, 1985; Morawetz et al., 1977; Ng, 1978; Scitovsky, 1976; Scitovsky, 1986, van Praag and Kapteyn, 1973), economists tend to ignore or dismiss the present findings, holding to 'the more comfortable conclusion that when incomes generally increase people, on the average, feel better off' (Silver, 1980, p. 160). This resistance is no doubt due in part to reluctance to abandon the Benthamite conception of the social good that has prevailed in traditional welfare economics and served as a justification for

[7] Very little time series analysis has actually been done. Inkeles' (1993) thoughtful review presents a body of evidence overlapping that given above, and reaches the same conclusion, namely, no relationship over time between income and happiness. Inkeles also notes other data for five countries suggesting a positive relationship over time, but he points out that this may be a statistical artifact due to a difference in the question asked at the two dates that are compared. Two of the five countries in his latter comparison, the United States and Japan, are the same as those for which the data given here show no significant positive time series association. Since the present comparison does not suffer from comparability issues, this suggests that the likelihood is high that the contradictory findings for five countries are a statistical artifact.

public policy. Recent work in normative economics, however, has increasingly focused on alternative approaches to the social good and their policy implications (see Anand and Ravallion, 1993; Hahnel and Albert, 1990; Hausman and McPherson, 1993, and the review of Sen's research by Sugden, 1993). The empirical results here would seem to underscore the importance of such work. As Hausman and McPherson (1993, p. 723) observe: 'An economics that is engaged actively and self-critically with the moral aspects of its subject matter cannot help but be more interesting, more illuminating, and ultimately more useful than one that tries not to be.'

Acknowledgements

The author is grateful to Donna Hokoda Ebata and Christine M. Schaeffer for excellent assistance, to Richard H. Day and Morton O. Schapiro for comments, to Ed Diener and Alan Heston for helpful data, and to the University of Southern California for financial support. The title of this article comes from Inkeles (1960, p. 18).

References

Abramovitz, Moses, 1979, Economic Growth and Its Discontents. in Michael J. Boskin, ed., Economics and Human Welfare: Essays in Honour of Tibor Scitovsky, New York: Academic Press, 3–22.

Anand, Sudhir and Martin Ravallion, 1993, Human Development in Poor Countries: On the Role of Private Incomes and Public Services. Journal of Economic Perspectives, 7:1 (Winter), 133–50.

Andrews, Frank M. (ed.), 1986, Research on the Quality of Life. Ann Arbour, MI: Survey Research Centre, Institute for Social Research, University of Michigan.

Bachman, Jerald G. and Patrick M. O'Malley, 1984, Yea-saying, Nay-saying, and Going to Extremes: Are Black-White Differences in Survey Results Due to Response Styles? Public Opinion Quarterly, 48, 409–427.

Brickman, Philip and D.T. Campbell, 1971, Hedonic Relativism and Planning the Good Society. in M.H. Appley (ed.), Adaptation Level Theory: A Symposium, New York: Academic Press.

Brickman, Philip and Dan Coates, 1978, Lottery Winners and Accident Victims: Is Happiness Relative? Journal of Personality and Social Psychology, 36:8, 917–927.

Campbell, Angus, 1981, The Sense of Well-Being in America, New York: McGraw-Hill.

Cantril, Hadley, 1965, The Pattern of Human Concerns. New Brunswick, New Jersey: Rutgers University Press.

Day, Richard H., 1986, On Endogenous Preferences and Adaptive Economizing. in Richard H. Day and Gunnar Eliasson, eds., The Dynamics of Market Economies, Amsterdam: North Holland, 153–170.

Diener, Ed, 1984, Subjective Well-Being. Psychological Bulletin, 95:3, 542–575.

Dubnoff, Steven, 1985, How Much Income is Enough? Measuring Public Judgements, Public Opinion Quarterly, 49, 258–99.

Duncan, Otis Dudley, 1975, Does Money Buy Satisfaction? Social Indicators Research, 2, 267–274.

Duesenberry, James S., 1949, Income, Savings, and the Theory of Consumer Behaviour. Cambridge, Mass.: Harvard University Press.

Easterlin, Richard A., 1973, Does Money Buy Happiness? The Public Interest, 30 (Winter), 3–10.

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 Honour of Moses Abramovitz, New York: Academic Press, Inc.

Easterlin, Richard A. and Eileen M. Crimmins, 1991, Private Materialism, Personal Self-Fulfilment, Family Life, and Public Interest. Public Opinion Quarterly, 55, 499–533.

Economic Report of the President, 1993, Washington, D.C.: U.S. Government Printing Office.

Frank, Robert H., 1985, Choosing the Right Pond, New York: Oxford University Press.

Gallup, George H., 1976, Human Needs and Satisfactions: A Global Survey. Public Opinion Quarterly, 40:4 (Winter), 459–467.

Hahnel, Robin and Michael Albert, 1990, Quiet Revolution in Welfare Economics, Princeton: Princeton University Press.

Hausman, Daniel M. and Michael S. McPherson, 1993, Taking Ethics Seriously: Economics and Contemporary Moral Philosophy. Journal of Economic Literature, XXXI:2 (June), 671–731.

Helson, H., 1964, Adaptation-Level Theory, New York: Harper and Row.

Hyman, Herbert H., 1968, Reference Groups, in David L. Sills, ed., International Encyclopedia of the Social Sciences, XIII. New York: Macmillan, 353–361.

Inglehart, Ronald, 1988, The Renaissance of Political Culture. American Political Science Review, 82:4 (December), 1203–1230.

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 Arbour, MI: Survey Research Centre, Institute for Social Research, University of Michigan, 1–56.

Inglehart, Ronald and Karlheinz Reif, 1992, European Communities Studies, 1970–1989: Cumulative File. Ann Arbour, MI: Inter-university Consortium for Political and Social Research, Second Edition, September.

Inkeles, Alex, 1960, Industrial Man: The Relation of Status to Experience, Perception, and Value. American Journal of Sociology, 66, 1–31.

Inkeles, Alex, 1993, Industrialization, Modernization and the Quality of Life. International Journal of Comparative Sociology XXXIV:1-2, 1–23.

Inkeles, Alex and Larry Diamond, 1980, Personal Development and National Development: A Cross-National Perspective. in Alexander Szalai and Frank M. Andrews (eds.), The Quality of Life: Comparative Studies, London: Sage Publications.

Lane, Robert E., 1993, Does Money Buy Happiness? The Public Interest, 113 (Fall), 56–65.

Lipset, Seymour Martin, 1960, Political Man: The Social Bases of Politics. Garden City, New York: Doubleday.

Maddison, Angus, 1991, Dynamic Forces in Capitalist Development. Oxford: Oxford University Press.

Modigliani, Franco, 1949, Fluctuations in the Saving-Income Ratio: A Problem in Economic Forecasting. in Conference on Research in Income and Wealth, Studies in Income and Wealth, XI. New York: National Bureau of Economic Research, 371–443.

Morawetz, David et al. 1977, Income Distribution and Self-Rated Happiness: Some Empirical Evidence. The Economic Journal, 87 (September), 511–522.

National Opinion Research Centre, 1991, General Social Surveys, 1972–1991: Cumulative Codebook, Chicago: National Opinion Research Centre.

Ng, Yew-Kwang, 1978, Economic Growth and Social Welfare: The Need for a Complete Study of Happiness. Kyklos, 31, Fasc. 4, 575–587.

Organization for Economic Co-operation and Development, 1992, Historical Statistics 1960–1990, Paris: OECD.

Pollak, Robert A., 1970, Habit Formation and Dynamic Demand Functions. Journal of Political Economy, 78:4 (July/August), 745–763.

Pollak, Robert A., 1976, Interdependent Preferences. American Economic Review, 66:3 (June), 309–320.

Rainwater, Lee, 1974, What Money Buys, New York: Basic Books.

Rainwater, Lee, 1990, Poverty and Equivalence as Social Constructions, paper presented at the Seminar on Families and Levels of Living: Observations and Analysis. European Association for Population Studies, Barcelona, October 29–31 (Luxembourg Income Study Working Paper 55).

Scitovsky, Tibor, 1976, The Joyless Economy. Oxford: Oxford University Press.

Scitovsky, Tibor, 1986, Human Desire and Economic Satisfaction, New York: New York University Press.

Silver, Morris, 1980, Money and Happiness?: Towards 'Eudaimonology' Kyklos, 33, Fasc. 1, 157–160.

Smith, Tom W., 1979, Happiness: Time Trends, Seasonal Variations, Intersurvey Differences, and Other Mysteries. Social Psychology Quarterly, 42:1, 18–30.

Smolensky, Eugene, 1965, The Past and Present Poor, in Task Force on Economic Growth and Opportunity, The Concept of Poverty. Washington, D.C.: Chamber of Commerce of the United States.

Sugden, Robert, 1993, Welfare, Resources, and Capabilities: A Review of 'Inequality Reexamined' by Amartya Sen. Journal of Economic Literature, XXXI:4 (December), 1947–1962.

Summers, Robert and Alan Heston, 1991, The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950–1988. Quarterly Journal of Economics, CVI:2 (May), 327–368.

van Praag, B.M.S. and Arie Kapteyn, 1973, Further Evidence on the Individual Welfare Function of Income. European Economic Review 4, 33–62.

Veenhoven, Ruut, 1991, Is Happiness Relative? Social Indicators Research, 24, 1–34.

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

World Bank, 1990, World Development Report 1990, Oxford: Oxford University Press.

Yasuba, Yasukichi, 1991, Japan's Post-war Growth in Historical Perspective. Japan Forum 3 (1 April), 57–70.