

INCOME AND HAPPINESS: TOWARDS A UNIFIED THEORY*

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Material aspirations are initially fairly similar among income groups; consequently more income brings greater happiness. Over the life cycle, however, aspirations grow along with income, and undercut the favourable effect of income growth on happiness, although the cross-sectional happiness-income difference persists. People think they were less happy in the past and will be happier in the future, because they project current aspirations to be the same throughout the life cycle, while income grows. But since aspirations actually grow along with income, experienced happiness is systematically different from projected happiness. Consequently, choices turn out to be based on false expectations.

Life is a progress from want to want, not from enjoyment to enjoyment.

Samuel Johnson, 1776

The relationship between happiness and income is puzzling. At a point in time, those with more income are, on average, happier than those with less. Over the life cycle, however, the average happiness of a cohort remains constant despite substantial income growth. Moreover, even though a cohort's experienced happiness remains constant throughout the life span, people typically think that they were worse off in the past and will be better off in the future.

Can economic theory explain these paradoxical observations? Perhaps, with some amendment for systematic change in material preferences or aspirations. In what follows, after a brief discussion of the concept of happiness and the nature of these paradoxical relationships, I suggest a model to explain them, and present some supporting evidence.

1. Concept and Sources of Happiness

Throughout this article, I use the terms happiness, subjective well-being, satisfaction, utility, well-being, and welfare interchangeably. The measurement and analysis of these various notions of subjective well-being has a half century history in the social sciences (see the bibliographical survey by Veenhoven (1993) which contains about 2,500 references). In the past, contributions by economists have been relatively slim. Recent years, however, have seen a flowering of work, including a symposium on economics and happiness in this JOURNAL (see Dixon (1997), Frank (1997), Ng (1997), Oswald (1997) and the references in these articles). In work on quality of life and the standard of living, the use of subjective indicators such as happiness has also been

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receiving increasing attention (Blundell *et al.* 1994; Elster and Roemer, 1991; Nussbaum and Sen, 1993; Offer 1996).

The principal way in which subjective well-being is measured in this work is a direct question of the sort used since 1972 in the United States' General Social Survey (GSS): '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?' (National Opinion Research Center, 1999, p. 171). There are a large number of variations on this. For example, instead of happiness the respondent may be asked about his or her satisfaction with life as a whole. The wording and number of the response categories may also vary. Veenhoven (1993) provides a valuable classification of queries on well-being, their wording, and response groupings. As a general matter, people have little trouble answering such questions; in the GSS, for example, the average proportion of nonresponses was less than one percent in fourteen surveys conducted between 1972 and 1987.

Measurement issues such as the reliability and validity of the replies, whether respondents report their true feelings, and possible biases resulting from the context in which the question is asked, have been extensively studied in the literature (see Diener (1984) and Veenhoven (1993)). The general conclusion of such assessments is that subjective indicators such as those used here, though not perfect, do reflect respondents' substantive feelings of well-being – in the words of psychologist Ed Diener (1984, p. 551), the 'measures seem to contain substantial amounts of valid variance.'

In addition to meaningfulness there is the question of comparability of such measures. As phrased, the happiness questions typically leave each person free to define well-being as he or she pleases. How, then, can the happiness of persons be compared? The essence of the answer, suggested by responses to queries as to the sources of happiness, is this: in most people's lives everywhere the dominant concerns are making a living, family life, and health, and it is these concerns that ordinarily determine how happy people feel.

Because personal responses on the sources of happiness bear, not only on the issue of comparability, but also on the causes of happiness, it is worth noting some evidence. In the early 1960s, social psychologist Hadley Cantril (1965) carried out an intensive survey in fourteen countries with highly diverse cultures and at widely different stages of socio-economic development, asking open-ended questions about what people want out of life.¹ Economists may

¹ The specific countries are listed in the source note to Table 2. In each country in a face-to-face interview a respondent was asked to give his view of the best of all possible worlds for himself – 'his wishes and hopes as he personally conceives them and the realisation of which would constitute for him the best possible life' (Cantril, 1965, p. 22). A similar question elicited views on the worst possible life. A respondent could, and often did, name a variety of concerns. One example of the care with which the survey was conducted is Cantril's description of the problem 'of translating the original questions from English into the various languages used . . . [C]onsiderable time was spent with experts to be sure the translation contained the precise nuances wanted. One of the methods often utilised in this translation process was to have someone who knew the native language, as a native, for example, an Arab, and who also was completely fluent in English translate our questions into Arabic. Then someone whose native language was English but who had a perfect command of Arabic would translate the Arabic back into English so a comparison could be made with the original question and, through discussion and further comparisons, difficulties could be ironed out' (p. 26).

take some reassurance from the fact that in every country, material circumstances, especially level of living, are mentioned most often, being named, on average, by about three-fourths of the population (Cantril, p. 162). Next are family concerns – cited by about half – such as a happy family life and good relations with children and relatives. These are followed by concerns about one's personal or family health, which typically are named by about one-third of the people. After this, and about equal in importance, at around one-fifth of the population, are matters relating to one's work (a good job) and to personal character (emotional stability, personal worth, self-discipline, etc.). Perhaps surprisingly, concerns about broad international or domestic issues, such as war, political or civil liberty, and social equality, are not often mentioned, being named, on average, by less than one person in twenty. Abrupt changes in the latter circumstances do affect people's sense of well-being at the time they occur, but ordinarily they are taken as a given, and it is the things that occupy most people's everyday life, and are somewhat within their control, that are typically in the forefront of personal concerns. Results similar to Cantril's on the sources of happiness have been obtained by others (Andrews and Withey, 1976; Campbell, 1981; Campbell *et al.* 1976; Veroff *et al.* 1981).

Thus, although each individual is free to define happiness in his or her own terms, in practice the kinds of things chiefly cited as shaping happiness are for most people much the same – probably because most people everywhere spend most of their lives doing the same types of things. This is not to say that the happiness of any one individual can be directly compared with that of another. But if one is concerned with comparing the subjective well-being of sizable groups of people, such as social classes, this similarity in feelings about the sources of happiness gives credence to such comparison.

2. Empirical Relationships

Further testimony as to the meaningfulness of the data on subjective well-being is the empirical regularities that turn up, to which I now turn.

2.1. *The Cross Sectional Relationship*

I start with the simple point-of-time association between happiness and income. In the 1994 GSS, those reporting themselves very happy ranges from 16% in the lowest income class to 44% in the highest (Table 1, column 2). To avoid relying on only one happiness category, such as the percentage very happy, I have computed a mean happiness rating, which can vary from a minimum of zero to a maximum of four (the procedure is indicated in the table footnote).² By this measure, average happiness varies directly with income throughout the income range, from a low of 1.8 to a high of 2.8.

² Oswald (1997, p. 1817, fn. 5) is critical of the use of one happiness category, such as the percentage very happy. The present scoring technique is common in the literature (cf. Herzog *et al.* 1982; Veenhoven, 1993).

Table 1
Percent Distribution of Population by Happiness at Various Levels of Income, United States, 1994

	(1)	(2)	(3)	(4)	(5)
Total household income (1994 dollars)	Mean happiness rating*	Very happy	Pretty happy	Not too happy	(Number of cases)
All income groups	2.4	28	60	12	(2,627)
75,000 and over	2.8	44	49	6	(268)
50–74,999	2.6	36	58	7	(409)
40–49,999	2.4	31	59	10	(308)
30–39,999	2.5	31	61	8	(376)
20–29,999	2.3	27	61	12	(456)
10–19,999	2.1	21	64	15	(470)
Less than 10,000	1.8	16	62	23	(340)

Source: National Opinion Research Center (1999) Question 157. ‘Don’t know’ and ‘no answer’ responses are omitted.

* Based on score of ‘very happy’ = 4, ‘pretty happy’ = 2, ‘not too happy’ = 0.

As far as I am aware, in every representative national survey ever done a significant positive bivariate relationship between happiness and income has been found (Andrews, 1986, p. xi; Argyle, 1999, pp. 356–7; Diener 1984, p. 533). The relationship holds for household income, both adjusted for family size and unadjusted as in Table 1. In recent work, there has been a tendency to discount this association between one’s objective economic circumstances, as indexed by income, and subjective well-being (Diener and Lucas, 1999, p. 215; Lykken and Tellegen, 1996; Schwarz and Strack, 1999, pp. 79–80). Partly, this is because in individual data there is such a large amount of unexplained variance – the simple correlation, for example, between happiness and income in the individual data underlying Table 1, although highly significant, is only 0.20. Partly, it is because this modest happiness-income relationship is further weakened by the introduction of controls for other variables, such as unemployment and education (Frey and Stutzer 1999, Oswald 1997, Veroff *et al.* 1981). It is also sometimes argued that the happiness-income relation, such as it is, holds only in the lower part of the income range (Argyle, 1999, p. 356).

This is not the place for detailed discussion of these arguments, but several brief comments are in order. First, the use of controls depends on one’s purpose. Education and unemployment affect well-being in part through their effect on income, and if one takes income as a proxy for an interrelated set of socio-economic circumstances, then the bivariate relation is important in its own right. Second, the supposed attenuation at higher income levels of the happiness-income relation does not occur when happiness is regressed on log income, rather than absolute income. Put differently – if the same proportional rather than absolute increase in income is assumed to yield the same increase in happiness, then income change at upper income levels causes the same increase in happiness as at lower. Finally, although the high degree of

variance in individual data is indisputable – a situation common in bivariate correlations of individual data – to discount the happiness-income relationship is to discount the personal testimony of individuals in country after country who mention economic circumstances most frequently as a source of happiness. The positive happiness-income relation is consistent with this testimony.

2.2. *The Life Cycle Pattern*

When one turns to the life cycle change in happiness, however, a seeming contradiction arises to the positive happiness-income relationship. On average, income, and economic circumstances more generally, improve substantially up to the retirement ages; yet, there is no corresponding advance in subjective well-being (Fig. 1).³ Nor does the levelling off and decline of income in the retirement years appear to be accompanied by any change in average happiness. The lack of a life cycle trend in happiness is supported by regressions of happiness on age for each of the cohorts in Fig. 1 – there is none with a statistically significant slope. A pooled regression with cohort dummy variables added also shows no significant coefficient.

It is possible, of course, that the seeming contradiction between the cross sectional and life cycle relation of happiness to income is because other factors

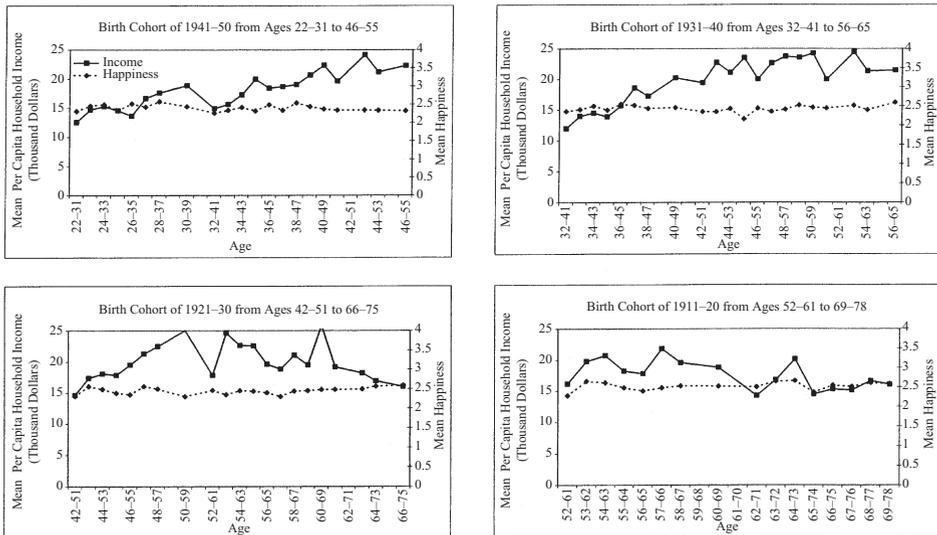


Fig. 1. *Happiness and Income over the Life Cycle*

³ Household income in Fig. 1 has been converted to a *per capita* basis to give a better idea of the change in material living level over the life cycle; for a more refined adjustment see Easterlin and Schaeffer (1999).

overwhelm the effect of income on happiness over the course of the life cycle. Yet, the effect of income is certainly not overwhelmed by such factors in the cross section. Moreover, the top ranking of economic circumstances as a source of happiness persists at all points in the life cycle (Herzog *et al.*, 1982). Thus we are presented with a paradox: why at a point-in-time are happiness and income positively associated, but over the life cycle there is no relation?

The life cycle pattern here is obtained by following each of several birth cohorts over a twenty-four year segment of its life span linking appropriate age data for successive years – what is sometimes termed a ‘synthetic cohort’ approach (for further detail, see Easterlin and Schaeffer (1999)). This is the first time that this technique, originated by demographers a half century ago, has been used to study life cycle happiness. Previous generalisations are based almost entirely on cross sectional relations between happiness and age, and give no consistent picture. Some find a positive relation (Mroczek and Kolarz, 1998); others, a U-shaped relation (Oswald, 1997); and yet others, no relation at all (Myers, 1992). The only panel study covering a sizeable period (10 years) reports no relation, a result consistent with the results of the present longitudinal study (Costa *et al.*, 1987).

The mixed results from cross sectional studies should come as no surprise, because they fail to consider the possibility that the cross sectional relationship may vary over time. A survey of cross sectional studies by George (1992) finds that in the United States before the 1970s older persons were less happy than younger; in recent surveys, however, older persons are happier. This finding is consistent with the changing relative fortunes of older and younger cohorts since World War II (Easterlin, 1987). Hence, depending on the calendar year chosen, cross sectional studies may lead to quite different conclusions regarding the life cycle trend in happiness (cf. also Campbell, 1981, ch. 12).⁴

This is not to suggest that the present life cycle approach is without shortcomings. For one thing, it is not possible to follow the same individual from one year to the next, as can be done with panel data. Also, the composition of a synthetic cohort, unlike that in panel data, is altered somewhat by international migration. In addition, there may be period as well as cohort effects in the data. But for all its shortcomings, the life cycle measurement procedure used here seems considerably better for inferring life cycle change than cross sectional age data, because it follows essentially the same group of persons over sizeable segments of the life span.

Stability in the life cycle happiness of a cohort does not mean, of course, that at the individual level subjective well-being is simply a flat line over the life span. Significant changes in one’s circumstances – life cycle events such as marriage, loss of a job, the birth of a child, retirement, and the death of a loved one – affect subjective well-being (McLanahan and Sorensen, 1985; Myers 1992). If the sample size here permitted finer calibration – for example, following single year birth cohorts – one might possibly observe the imprint of

⁴ For further analysis of the relation of the cross sectional happiness-age patterns to the life cycle patterns in the United States, see Easterlin and Schaeffer (1999) pp. 289 ff.

such effects in the data, because some of them are age-related. For the 10 year birth cohorts and 24 year life span segments studied here, however, such effects, to the extent they exist, fail to alter the horizontal trend in happiness.

2.3. *Past and Prospective Happiness*

Based on the observed pattern of life cycle happiness, one would expect that individuals, when asked how their past and prospective happiness compares with the present, would report little change. As it turns out, this is not the case – people at any given point in the life cycle typically think that they will be better off in the future than at present, and that they are better off today than in the past. I am talking here of comparisons over periods of some length, say, five years or more, not very short intervals such as year or less. The most comprehensive evidence of this comes from the Cantril survey previously mentioned. Respondents, after indicating their present happiness level on an integer scale from zero to ten, were asked where on the scale they were five years ago, and where they think they will be five years hence. In every country in every age group from 18–29 to 50 and over, respondents, on average, rated their prospective happiness higher, and their past happiness less, with only a few trivial exceptions (Table 2). Younger respondents saw, on average, greater changes than older, and future changes were envisaged to be greater than past.

Time series data for the United States confirm the evidence of Cantril's international cross section. The same question as Cantril's was asked in 36

Table 2
*Past and Future Happiness Compared with Present Happiness, by Age,
14 Countries, 1965*

Age group	(1)	(2)	(3)	(4)	(5)
	Past versus present happiness			Future versus present happiness	
	Number of observations	Number rating past lower	Mean difference, present minus past	Number rating future higher	Mean difference, future minus present
18–29	14	14	1.0	14	2.2
30–49	22	22	0.8	22	2.0
50+	14	12	0.6	13	1.3
65+	4	2	0.1	4	0.4

Source: Cantril (1965), pp. 365–77. An observation is the mean happiness value for an age group in a country. In some countries age groups were more detailed than those given here, hence the number of observations exceeds the number of countries. The questioning procedure is of the following nature. Respondents indicate where they currently are on a ladder with rungs from zero to ten, where ten is 'completely happy' and zero is 'unhappy'. They then indicate where on the ladder they stood five years ago and where they think they will be five years hence (Cantril, 1965, p. 23). The countries included (with sample sizes) are: Brazil (2,170), Cuba (992, urban only), Dominican Republic (814), Egypt (499), India (2,366), Israel (1,170), Japan (972), Nigeria (1,200), Panama (642), Philippines (500), Poland (1,464), United States (1,549), West Germany (480), Yugoslavia (1,523).

surveys in the 26-year-period from 1959 to 1985 (Lipset and Schneider, 1987, pp. 130–1). In every survey respondents expected, on average, to be happier in the future, and felt that they had been worse off in the past, there being only three small exceptions in the present/past comparison. As in the international data, future changes were envisaged to be greater than past.⁵ But in fact, over the entire period present happiness was, on average, constant.⁶ Thus we have another paradox to explain – why people typically think that they were worse off in the past and will be better off in the future, although their reports on present happiness remain constant over time.

3. Explaining the Relationships: Theory

I have noted three empirical regularities that need to be explained. At a given time those with higher incomes are happier, on average, than those with lower. Also, at a point-in-time respondents typically feel that they were less happy in the past and will be more happy in the future. Finally, experienced happiness is, on average, constant over the life cycle. The tentative explanation, to which I now turn, involves taking account of both income and aspirations, and how they vary at a point in time as well as over time.⁷ As has been seen, the sources of happiness reported by individuals range beyond purely material concerns, but I focus here on goods aspirations because of the pre-eminent importance of economic circumstances in reports on sources of happiness.

Assume that at the start of the adult life cycle people in different socio-economic circumstances have a fairly similar set of material aspirations, say, A_1 . Those with higher income will then be better able to fulfill their aspirations and, other things equal, will, on average, feel better off (Fig. 2, compare points 1, 2, 3 on the utility function corresponding to the aspiration level, A_1). This is the point-of-time positive association between happiness and income.

If income rises and material aspirations remain constant, then individuals will move upward along the A_1 utility function in Fig. 2, increasingly realising their aspirations and experiencing rising levels of well-being – progressing, for example, from point 2 to point 3, with well-being rising from u_m to u_2 . If, however, income remains constant and aspirations rise to, say, A_2 , then the satisfaction associated with a given level of income would diminish. An individual whose income is, say, y_m , would experience a level of satisfaction u_m if she were on the utility function corresponding to aspiration level A_1

⁵ Loewenstein and Schkade (1999, p. 90) report other instances in which future changes in well-being are systematically projected to be greater than past.

⁶ This is, of course, the well-established finding that as the income of a nation rises, happiness typically remains unchanged (Blanchflower and Oswald, 1999; Diener and Oishi, forthcoming; Easterlin, 1974, 1995; Kenny, 1999). Life cycle well-being does not have to follow the national pattern of time series stability. Each cohort, for example, might have an identical life cycle pattern of rising well-being, but if each started at the same initial level, then the national average would be constant over time.

⁷ See March and Simon's (1968) 'general model of adaptive motivated behaviour'. De la Croix (1998), building on Ramsey (1928), presents a formal economic model of well-being, using this approach. For similar models in psychology, see Michalos (1986, 1991).

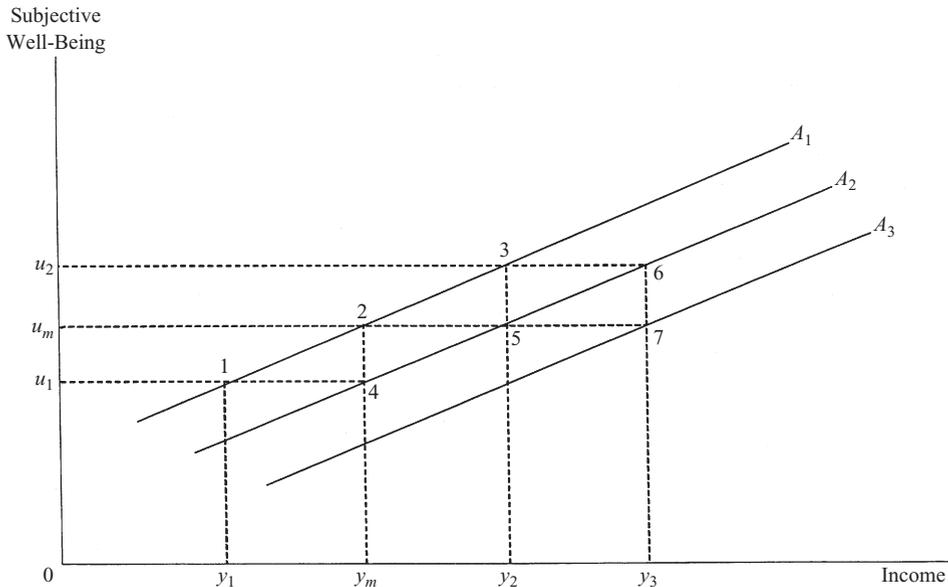


Fig. 2. *Subjective Well-Being (u) as a Function of Income (y) and Aspiration Level (A)*

(point 2), but a lower level of satisfaction, u_1 , if she were on the utility function corresponding to the higher aspiration level, A_2 (point 4).

I conjecture that, in reality, material aspirations change over the life cycle roughly in proportion to income. Hence, individuals typically move from point 2, neither to point 3 nor point 4, but to point 5, because both aspirations and income rise, with roughly offsetting effects on well-being. This results in the observed stability during the working ages of life cycle well-being, a product of the countervailing effects of rising income and aspirations. The stability of well-being in the retirement ages suggests that this mechanism is reversible.

How does one explain the statements on past and prospective welfare? The key is to recognise that these are point-of-time responses and are consequently based on the aspirations that people have acquired at that point in time. Consider, for example, an individual who has moved from point 2 to point 5, with income growing from y_m to y_2 and aspirations rising from A_1 to A_2 . When asked at point 5 how well off he was in the past, his judgment is based on his current higher level of aspirations (A_2), not on the lower level of aspirations (A_1) he actually had in the past. Because his aspirations have risen he evaluates his previous income, y_m , on the basis of his new utility function, A_2 , and sees y_m as yielding the satisfaction level, u_1 (point 4). When he was actually at y_m , however, his material aspirations were lower, and he enjoyed the higher happiness level, u_m (point 2 on the utility function A_1).

The assessment of one's future well-being is similarly premised on one's material aspirations at the time the question is asked. A person at point 5 on the utility function A_2 , who anticipates a growth in income to y_3 will envisage

an improvement in welfare from u_m to u_2 , that is, an upward movement along the A_2 function from point 5 to point 6. What she does not know is that when she gets to y_3 she will have, not just higher income, but higher material aspirations as well, and be on the utility function corresponding to the higher aspiration level, A_3 . Thus, she will end up at point 7, not point 6, and experience about the same level of satisfaction, u_m , that she did at point 5.

The distinction drawn by psychologists between decision utility and experienced utility is illustrated clearly here (Kahneman *et al.* 1997; Tversky and Griffin, 1991). Decision utility is the perceived (*ex ante*) satisfaction associated with choice among several alternatives; experienced utility is the satisfaction realised (*ex post*) from the outcome actually chosen. When asked about well-being five years ago or five years hence, a person at point 5 with income y_2 on utility function A_2 , can be thought of as telling us how she would feel *today* if she had the income y_m (worse off) or y_3 (better off). This is her *decision* utility. It explains, for example, why she says she would not want to go back to her old lower-paying job (point 4) and why she may take a new higher-paying job (point 6). However, if she does take the higher-paying job and her income goes up, her material aspirations too will rise. Hence, when asked how happy she is when she actually has income y_3 , that is, what her *experienced* utility is, she turns out to be at point 7, not point 6.

Economists tend to assume that decision utility and experienced utility are the same. The present theory implies that there is a mechanism at work – aspirations rising in proportion to income – that makes them systematically different (see also Kahneman (1999), Rabin (1998)). If one's interest is solely in the choices determining behaviour, then decision utility is enough. But if one is interested in the welfare effects of behaviour, then the effect of the income-aspiration mechanism on experienced utility needs to be taken into account.

4. Explaining the Relationships: Evidence

It is one thing to speculate; it is another to give supporting evidence, particularly with regard to the central feature of the theory – differences and trends in material aspirations. There is virtually no systematic empirical work on changing aspirations on which to build, but in what follows, I present a few pieces of new data that I think are consistent with the theory just presented. I also note some supporting evidence from the psychological literature.

I first divide each cohort in Fig. 1 into two socio-economic groups whose composition remains largely the same over the life cycle – those with more than a high school education and those with a high school education or less. In effect, the educational system is seen as channelling persons into two different life cycle tracks, with the higher schooling group enjoying the benefit of higher income.⁸ The analysis is necessarily more approximate than the

⁸ For a review of recent studies of the relation between education and income, see Ashenfelter and Rouse (1999). The authors' survey concludes that education has an important causal impact on income independently of ability and family background.

previous one for several reasons: dividing a birth cohort by level of education results in a smaller sample size, misreporting of educational level may be a problem, and during the life cycle some individuals shift from the lower to the higher educational cohort as a result of ongoing education. In the happiness data below, I have tried to minimise these problems by using a three-year moving average, and confining the analysis to that segment of a cohort's life cycle for which the distribution by level of education remains fairly constant.⁹

The cohorts, when subdivided by level of education, present a microcosm of the cross-sectional and life cycle patterns already presented (Fig. 3). At any given point in the life cycle, happiness varies directly with socio-economic status as measured by education; over the course of the life cycle, however, there is no change in the happiness of either socio-economic group.

The persistent differential by socio-economic status underscores the importance of objective circumstances for well-being. Essentially the same people are in each educational group throughout the life cycle, and those on the higher income track are consistently happier, on average, than those on the lower. Psychologists have sometimes pointed to the finding that over time the same individuals tend to be high (or low) on the happiness scale as evidence that personality or genetic differences are the source of differences in happiness, not 'external conditions' such as economic circumstances (Diener and Lucas, 1999, p. 214). This conclusion is contradicted by the present result. To dismiss the effect here of economic circumstances on well-being, one would have to

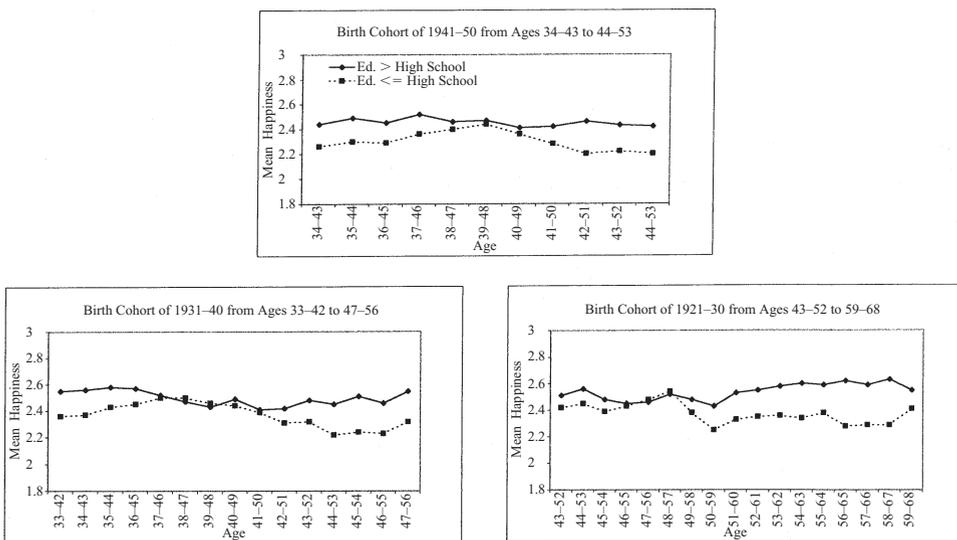


Fig. 3. *Life Cycle Happiness by Level of Education*

⁹ For the cohort of 1941–50, the total sample size for the 3-year moving average is around 900 or more and the percentage of the cohort with a high school education or less fluctuates within a few percentage points of 44. For the cohort of 1931–40, the corresponding figures are 600 or more and 65; for that of 1921–30, 600 or more and 71.

make a very strong case that inherent genetic and personality traits are what lie behind the channelling of persons into the two educational tracks.

The theory I have presented makes three assumptions about material preferences: (1) early in the life cycle, preferences are fairly similar among income groups, (2) over the life cycle, preferences vary in proportion to income, and (3) in evaluating past or future happiness, people take their preferences to be the same as those held currently. Each of these will be taken up, in turn.

The desires of high school seniors (largely 18 year-olds) for big ticket consumer goods, as reported in surveys, provide striking evidence that people start out with very similar aspirations. The proportion naming each of twelve consumer goods as extremely or quite important is virtually the same for those who expect to attend a four-year college as for those who do not (Table 3). The average number of consumer goods named as extremely or quite important by the two groups is an identical 4.5 (see the bottom line of Table 3).

This does not mean that material aspirations, in general, are identical for the two groups. Although a number of important consumer goods are reported on here, the list is not exhaustive. Moreover, the responses do not indicate the specific characteristics of each good that the respondent has in mind. It is plausible to suppose that the characteristics of a 'house of my own' envisaged by those from higher status backgrounds differ systematically from those contemplated by persons from lower status backgrounds. Nevertheless, the similarity of the two lists is remarkable – who would have predicted, for

Table 3
*Desires of High School Seniors for Big Ticket Consumer Goods, by Plans to Attend
Four Year College, 1976*

Consumer good	(1)	(2)
	College plans	No college plans
	(percent answering extremely or quite important)	
At least one car	76	80
A house of my own (instead of an apartment or condominium)	52	53
Lots of space around my house, a big yard	60	58
A well-kept garden and lawn	60	58
Major labour-saving appliances (washer, dryer, dishwasher, etc.)	51	51
A high quality stereo	45	44
Clothes in the latest style	41	40
A motor-powered recreational vehicle (powerboat, snowmobile)	15	16
At least two cars	14	14
A large (full-sized) car	14	13
A vacation house	12	11
A new car every 2–3 years	11	11
Mean number of goods per person extremely or quite important	4.5	4.5

Source: Bachman *et al.* (1980) pp. 139–41. The question asked is: Looking toward the future, how important would it be for you to have each of the following things? The number of cases in each column is about 1,400.

example, that the proportion naming 'major labour-saving appliances' as extremely or quite important would be the same 51% for each group?

Given the similarity in material aspirations at the start of the life cycle, initial differences in happiness by level of schooling must be due, according to the theory, to differences in income that make it possible for those with more schooling to attain their material aspirations better than those with less. Suggestive evidence that the happiness difference early in the adult life cycle is due to differences in income comes from survey questions that were asked of a nationally representative sample of the adult population in 1978. In this survey respondents were asked whether they considered each of ten consumer goods – much like those on which high school seniors reported – to be part of the 'good life', that is, 'the life you'd like to have', and also whether they actually had the items. For the youngest age group of respondents, those 18 to 29 years old, the bivariate correlation between material aspirations, measured by the number of big ticket consumer goods named as part of the good life, and income was -0.01 , indicative again of the lack of difference in aspirations by socio-economic status early in the adult life cycle. The correlation between the number of big ticket consumer goods respondents actually had and income was a highly significant 0.21 . Although there are no reports on happiness in this survey, it is noteworthy that the magnitude of the correlation with income of what one might call 'consumer wealth' is just about the same as that reported earlier for the correlation of happiness with income. These results are consistent with the view that the point-of-time positive association between happiness and income is due to the fact that higher income makes possible greater fulfillment of material aspirations.

The theory also postulates that over the life cycle material aspirations rise roughly in proportion to income. Again, the 'good life' data provide some support. If one follows cohorts over a roughly 15 year segment of the life span, one finds that within a cohort the increase in the number of consumer goods desired – that is, the number named as part of the good life – is greater for those with more schooling than for those with less (Table 4, column 1).¹⁰ The increase in consumer wealth is also greater for the higher educational group (column 2). The greater growth in both material aspirations and consumer wealth for the higher schooling group is consistent with the hypothesis that growth in income is driving the growth in material aspirations.¹¹

Further support for the hypothesis that income is behind the growth in aspirations comes from the changing correlation between aspirations and

¹⁰ The approach here is to follow a 'synthetic cohort' as in the happiness analysis described in Section 2.2. The analysis is more approximate, however, because the Roper 'good life' question has been asked only intermittently, the sample size is smaller, and the age reporting in the data is usually for groups of five years or more. For the analysis reported in Tables 4 and 5, I have paired the 1978 data for ages 18–29 with the 1994 data for ages 30–44 (roughly the birth cohort of 1950–64) and the 1978 data for ages 30–44 with the 1994 data for ages 45–59 (roughly the birth cohort of 1935–49).

¹¹ Hirsch (1976, p. 61) discusses how the 'fulfilment of given wants generates new and higher order wants.' Cf. also Durkheim ([1930] 1952, p. 248), Leibenstein (1976, p. 197). Rainwater (1994) finds that in the United States the income perceived as necessary to get along rose between 1950 and 1986 in the same proportion as actual *per capita* income.

Table 4
Change between Specified Life Cycle Ages in Mean Number of Big Ticket Consumer Goods Desired and Owned for Persons with Specified Amount of Schooling

Cohort, age, and schooling	(1)	(2)
	Change in number of consumer goods	
	desired	owned
A. Cohort of 1950–64 between ages 18–29 and 30–4		
Persons with schooling greater than 12 years	1.4	1.6
Persons with schooling 12 years or less	1.0	1.1
Difference	0.4	0.5
B. Cohort of 1935–49 between ages 30–44 and 45–59		
Persons with schooling greater than 12 years	1.3	1.0
Persons with schooling 12 years or less	0.9	0.4
Difference	0.4	0.6

Source: Roper-Starch Organization (1979, 1995)

income over the course of the life cycle. If income is the cause of changing material aspirations, then one ought to observe the gradual emergence during the life cycle of a positive correlation between material aspirations and income, and this, in fact, is the case (Table 5).

Fig. 2 can be used to interpret these patterns by level of education. Early in the adult life cycle, those with more and less education are both on roughly the same utility function, sharing a common set of aspirations, A_1 . Because those with more education earn a higher average income than those with less

Table 5
Correlation with Income of Number of Big Ticket Consumer Goods Desired, Specified Age in Life Cycle, Cohorts of 1950–64 and 1935–49

	(1)	(2)	(3)	(4)
	Age	Correlation coefficient	Age	Correlation coefficient
Cohort of 1950–64	18–29	–0.01	30–44	0.08*
Cohort of 1935–49	30–44	0.05	45–59	0.14*

* Significance levels are approximately as follows: 0.08 correlation is significant at 0.10 level; 0.12 at 0.01 level; and 0.15 at 0.001 level. The number of cases in the first row is 474 and 562; in the second row, 427 and 349.

Source: Same as Table 4.

– say, y_m compared to y_1 – their subjective well-being is correspondingly greater, the differential equalling $(u_m - u_1)$. As each group progresses through the life cycle, incomes rise more for the higher schooling group from, say, y_m to y_3 , while those of the lower schooling group rise from y_1 to y_m . But the greater growth of income of the higher schooling group causes their aspirations also to rise more – from, say, A_1 to A_3 , compared to a growth in aspirations for the lower schooling group from A_1 to A_2 . Hence, the higher schooling group moves from point 2 to point 7 while the lower schooling group moves from point 1 to point 4. As a result, the happiness differential enjoyed by the higher schooling group remains constant at $(u_m - u_1)$.

The psychological mechanism implicit in the view here of the determinants of material aspirations is suggested by the well-known ring toss experiment in which individuals – given free choice of how close to stand to the peg – are found to set their aspirations in proportion to their abilities. Then, as they get better at the ring toss, they tend to move farther away. Increasing skill is thus matched by increasing aspirations, in much the same way that increasing ability to get goods is matched by increasing material aspirations.

The third assumption about preferences is that people base their past or prospective happiness evaluations on their current preferences. The social science literature provides some support for this hypothesis. A cohort study of political attitudes by Markus (1986) found that respondents whose attitudes actually had changed tended to report that their past attitudes were the same as those currently held. Social psychologists Kahneman and Snell (1992), based on small group experiments, report that ‘the dominant heuristic [to predict future tastes] is to consult current desires’ and that ‘there was little or no correlation between the predictions of hedonic change that individuals made and the changes they actually experienced’ (pp. 187, 189). Rabin (1998), generalising from a survey of the social psychology literature, observes that ‘we don’t always accurately predict our own future preferences, nor even accurately assess our experienced well-being from past choices’ (p. 12). Such statements, though not providing as specific support as one might like, are consistent with the current hypothesis.

The present model, however, leaves unanswered an important question – how to explain the similarity in material aspirations among those of different socio-economic status at the start of the life cycle? Those with more schooling typically come from more affluent backgrounds; hence, one would suppose that they would start out with higher material aspirations as well.

I believe that the explanation for the initial similarity and then growing divergence in aspirations by socio-economic status lies in the changing role over the life cycle of two factors determining aspirations – one’s own past experience and social comparison. The importance of peer influences – that is, social comparison – in shaping the aspirations of the young is widely recognised. These peer influences, I believe, typically make for a commonality in the aspirations of young persons from different socio-economic origins. In the pre-adult ages, those from different backgrounds intermingle to a fair extent – at school, in sports, in recreational activities such as rock concerts,

and at work, where they may hold the same jobs, such as fast food vendors. They see much the same television programmes, movies, and advertisements. These common experiences and social contacts make for more similar aspirations by socio-economic status than if family background were the only factor. However, once people enter the working ages, the experiences and contacts shared by those of different socio-economic status diminishes. Those who go on to college are embarked on a different career trajectory, and have limited contact in the workplace with those who do not share the same educational background. Their higher income also makes for residential segregation by socio-economic status. Although the experiences of others continue to influence aspirations, it seems likely that throughout the socio-economic spectrum, reference groups, over the course of the life cycle, become increasingly narrower than in the pre-adult years, and more confined to those of like status. As a result, the factors making in the pre-adult years for similarity in aspirations among those from different socio-economic backgrounds become progressively less salient over the course of the life cycle.

This reasoning can be tied to the more general theoretical literature in psychology and economics on the formation of preferences. In psychology, the two sets of factors identified here as influencing aspirations – one's past personal experience and the experience of others – correspond roughly to what is known as adaptation level theory and social comparison theory (Brickman and Campbell 1971, Frederick and Loewenstein 1999, Helson 1964, Myers 1992, Olson *et al.* 1986).¹² The counterparts in economics of these two theories are habit formation models and theories of interdependent preferences (Day, 1986; Duesenberry, 1949; Frank, 1985, 1997; Modigliani, 1949; Pollak, 1970, 1976; Tomes, 1985). Both the psychological and economic theories stress that judgments are formed by comparison – in the first case with one's past experience; in the second, with the experience of others.

I am suggesting that while both influences are at work in shaping material aspirations and hence judgments of well-being, their relative importance shifts over the course of the life cycle. In the pre-adult years social comparison over a wide socio-economic spectrum plays a relatively larger part than personal background in shaping aspirations. In the adult years, as individuals with different educational backgrounds embark on relatively segregated socio-economic tracks, past personal experience becomes more important and social comparison influences are increasingly confined to a reference group comprised of those of one's own socio-economic status. Hence, material aspirations start out much more alike among those from different socio-economic backgrounds than is true later in the life cycle, when one's personal income experience and that of others on the same track becomes the major driving force behind material aspirations.

¹² Kahneman (1999) points out that adaptation level and aspiration level are two different concepts. It seems likely, however, that they change in tandem. As one adapts to improved performance at the ring toss, aspirations correspondingly increase.

5. Summary

The pattern of change in material aspirations over the life cycle explains some of the paradoxical relationships between subjective well-being and income. At the start of the adult life cycle material aspirations are fairly similar throughout the population, but over the life cycle, aspirations increase in proportion to income. Utility functions shift inversely with material aspirations.

As a general matter, subjective well-being varies directly with income and inversely with material aspirations. At the start of the life cycle those with higher income are happier, because material aspirations are fairly similar throughout the population, and those with more income are better able to fulfill their aspirations. Income growth does not, however, cause well-being to rise, either for higher or lower income persons, because it generates equivalent growth in material aspirations, and the negative effect of the latter on subjective well-being undercuts the positive effect of the former. Even though rising income means that people can have more goods, the favourable effect of this on welfare is erased by the fact that people want more as they progress through the life cycle. It seems as though Emerson (1860) had it right when he said 'Want is a growing giant whom the coat of Have was never large enough to cover.'

Because the educational system channels people into two different life cycle tracks characterised by higher and lower income trajectories, those with more education are, on average, happier throughout the life cycle than those with less. Some psychologists have claimed that persistent interpersonal differentials in well-being over the life cycle are evidence that personality or genetic traits primarily determine relative well-being, not 'external' factors such as income. The present analysis makes clear that external factors are important, because the educational tracking of persons leads to persistent differences in well-being via its effect on relative incomes.

Judgments of well-being at any particular point in time are based on the material aspirations prevailing at that time. As a result, people tend to evaluate past lower incomes less favourably than they did when they were actually in that situation and had lower aspirations. Similarly, they judge prospective higher income situations more favourably than when they actually are in those situations, because they fail to anticipate the rise in material aspirations that will come with the growth in income. Choice among alternatives – decision utility – is based on the aspirations prevailing at the time of choice. The actual welfare effect of such choice – experienced utility – differs systematically from decision utility, because of unforeseen changes in aspirations. Thus, movement to a higher income situation is envisaged by a decision-maker as increasing happiness, because it is based on a projection of income growth with aspirations unchanged. But the increase in income itself engenders a corresponding rise in material aspirations, and experienced utility does not rise as expected.

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