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Life Goals Matter to Happiness: A Revision of Set-Point Theory

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Abstract Using data from the long-running German Socio-Economic Panel Survey (SOEP), this paper provides evidence that life goals matter substantially to subjective well-being (SWB). Non-zero sum goals, which include commitment to family, friends and social and political involvement, promote life satisfaction. Zero sum goals, including commitment to career success and material gains, appear detrimental to life satisfaction. Finding that conscious life goals matter can potentially make an important contribution to SWB theory. The most widely accepted theory—set-point or dynamic equilibrium theory—essentially claims that set-points are near-automatic consequences of hereditary characteristics, including personality traits. Life goals play no role in these theories and major life events are viewed as having only a transitory effect. The SOEP panel data show that, over a 15–20 year period, non-trivial minorities record substantial changes in their set-points. This paper shows linkages between these changes and (a) the personality traits of extraversion, neuroticism and internal locus of control and (b) choice of life goals.

Keywords Life goals · Happiness · Subjective well-being · Set-point theory

1 Introduction

Buddhists are required to contemplate their own death, not to feel maudlin, but in order to refocus on life priorities. The idea is to imagine that you are on your deathbed and you are thinking back over your life, deciding what was worthwhile and what was not. How does the time spent working for promotion look now? The money spent on the giant plasma TV? The time on holiday with family and friends? The time not spent on community activities?

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This paper presents evidence that life goals matter to subjective well-being (SWB). Non-zero sum goals promote life satisfaction, zero sum goals are detrimental. Non-zero sum (non-competitive) goals include commitment to marriage and children, and also to friendships, helping others and being socially and politically involved. Zero sum (competitive) goals include commitment to getting ahead in one's job and to achieving a high material standard of living.

New evidence comes from the German Socio-Economic Panel Survey (SOEP), which from its inception asked questions on SWB and has in recent years introduced an increasing number of psychological and attitudinal questions (Wagner et al. 2007). These include items on life satisfaction, life goals, personality and values (Wagner and Schupp 2007). Using these data, it can be shown that the goals individuals express and presumably tend to follow have a significant effect on their life satisfaction, net of the effects of personality and a range of standard demographic and economic variables, including gender, age, marital status, education, income and health status.

Evidence that conscious life goals matter to life satisfaction can potentially make an important contribution to theories of SWB. SWB theory, as currently understood, has the depressing implication that one's level of happiness is extremely hard to change because it depends on characteristics one was born with or which are developed early in life. The most widely endorsed theory at the present time appears to be set-point theory (Lykken and Tellegen 1996; Lykken 1999). Set-point theory had several precursors, including adaptation theory (Brickman and Campbell 1971; Brickman et al. 1978), the personality theory of SWB (Costa and McCrae 1980), and dynamic equilibrium theory (Headey and Wearing 1989, 1992). All these theories claim that a person's set-point or baseline or equilibrium level of SWB are near-automatic consequences of hereditary characteristics and personality traits. Conscious life goals play no role in these theories and major life events are viewed as having only a transitory effect.

In recent years there has been some questioning of set-point theory and its relatives. Some life events are so severe that victims never recover back to their previous set-point or equilibrium level. One such event is the unexpected death of a child (Wortman and Silver 1987). Repeated spells of unemployment, although not a single spell, have been shown to have a 'scarring effect' from which most people do not recover (Clark et al. 2004). The effects of suffering a health disability are debated. Some studies appear to show small or non-significant effects (e.g. Brickman et al. 1978; Okun and George 1984; Brief et al. 1993), while others claim that disabilities have a significant negative effect (Mehnert et al. 1990). Getting married temporarily raises the SWB of most people, but then most revert to their previous set-point (Lucas et al. 2003). Entertainingly, the only positive life event which has been unambiguously shown to raise the SWB set-point is cosmetic surgery (Wengle 1986; Frederick and Loewenstein 1999).

Up to now a serious barrier to testing set-point theory has been the lack of long-term panel survey data on SWB. The theory claims that set-points do not change, even in the long run, but without evidence from the same panel of respondents, recording their SWB for a long period, it has not been possible directly to test the central proposition.

Evidence from twin studies, showing that SWB appears to be at least 50% hereditary (Lykken and Tellegen 1996), is clearly crucial and provides support for set-point theory, but it does not rule out the possibility that some individuals may record substantial long term changes in SWB.

The German household panel (SOEP) is beginning to provide long term evidence on SWB and certainly offers the longest series of observations yet available worldwide. A large representative national sample of respondents have provided life satisfaction

ratings every year since 1984 (data for 1984–2005 are now available; see below). Using these data, Diener and colleagues observe that some respondents appear to have recorded long term and perhaps permanent changes in their SWB (Lucas et al. 2003; Clark et al. 2004; Fujita and Diener 2005). However, their approach is primarily to focus on specific events associated with change, notably getting married, becoming widowed and becoming unemployed. In a very recent paper Diener et al. (2006) criticize adaptation theory as initially formulated by Brickman and Campbell (1971) and suggest some revisions which may also apply to set-point theory as understood in the 1990s.

Using the same SOEP data, the present author has taken a more radical approach, based on the view that set-point theory definitely requires revision and can be sensibly modified (Headey 2006a, b). This view stems from finding that 5–6% of the German sample had life satisfaction scores which were 1.5 standard deviations higher in the 5—year period 2000–2004, compared with 1985–1989. About 10–12% recorded declines of 1.5 standard deviations or more. Changes of this magnitude to the set-points of non-trivial minorities were not seen as demonstrating that set-point theory was false, but were seen as indicating that the theory needs revision. The aim was to account for the long term and apparently permanent changes recorded by minorities, as well as for the stability of most people's SWB.

Revisions to set-point (or dynamic equilibrium) theory were proposed, which were based on finding that high scores on the personality traits of extraversion (E), neuroticism (N) and perhaps openness (O) predispose some individuals to have a relatively high probability of recording long term changes in SWB. People who score high on E, N and O 'roll the dice' more often than others and are at greater upside or downside risk of positive or negative change in SWB.

The only two previous papers which, so far as we know, directly challenge the theory are by Easterlin (2005) and Huppert (2005). Easterlin (1974) was previously best known for research showing the lack of impact of long term real income gains on SWB; results which are an important plank in set-point theory. Easterlin's account of why income gains do not enhance SWB is that individuals who achieve gains revise their aspirations upwards and so are no more satisfied than before, precisely because the gap between aspirations and current achievement remains about the same.[1] In part, upward revisions of aspirations are due to rising social standards ('keeping up with the Jones's') and can be accounted for in terms of what psychologists term 'social comparison theory' (Frederick and Loewenstein 1999). The way economists treat the same point is by considering a theory of utility/welfare which treats utility as partly endogenous (i.e. partly dependent on what the Jones's have) rather than exogenous (i.e. decided independently by the individual in question). In recent decades most economists have treated the preferences that go into individuals' utility functions as exogenous and as best revealed and measured by behaviour, rather than by stated attitudes (Samuelson 1938). Easterlin's endogenous viewpoint harks backs to Duesenberry's (1949) theory of consumption and utility (see also Hollaender 2001).

In his 2005 paper Easterlin goes beyond claiming that 'keeping up with the Jones's' is the sole reason for income gains not enhancing SWB. He cites research by the Roper-Starch organization (1979, 1995) as showing that even people who make large gains in their material standard of living (as indicated by ownership of 'big ticket' consumer

[1] There is some debate about whether complete (100%) adaptation occurs. This is Easterlin's view. An alternative account suggests that adaptation is typically about 70% (Frey and Stutzer 2002).

durables)—gains presumably greater than the Jones's were making at the same time—raise their aspirations and almost immediately want more consumer goods.

So Easterlin (2005) is now claiming that gains to SWB from acquiring additional material goods are close to zero, even if one is doing better than the Jones's. He finds that complete adaptation destroys all subjective benefits. However, his main new point is to suggest that the picture is quite different in non-economic domains. He reviews research relating to the domains of family life and health, concluding that in these domains complete adaptation does not occur, although partial adaptation does. For example, people who get married are sometimes happier in the long term, and people who separate and remain single are often unhappier. People who become seriously disabled or have painful chronic conditions like rheumatoid arthritis have permanently lower levels of SWB than otherwise similar people who are not disabled (Mehnert et al. 1990).[2] Easterlin's view, derived from these research results, is that individuals would be wise to allocate more time to the family and health domains, and less to the economic domain. In coming to this conclusion he echoes previous economists who have also questioned the priority which Governments and individuals appear to give to the economic domain (Scitovsky 1976; Hirsch 1976; Ng 1978; Frank 1985; see also Lane 2000).

Huppert (2005) also seriously questions set point theory. Drawing from the classic mood research of Wessman and Ricks (1966; see also Davidson 1992, 2002), she proposes that some people have higher emotional reactivity than others and that, if such people are exposed to either particularly favourable or particularly adverse life events, their set points may change. However, as she notes, these ideas are extrapolations from laboratory research and are not based on representative population samples.

Some previous research has indicated that pursuing financial success is not just irrelevant to life satisfaction but actually harmful (Nickerson et al. 2003; see also Diener and Seligman 2004). Nickerson et al., in a longitudinal study, showed that people who desire financial success tend to be less satisfied with their family life, and that overall life satisfaction is somewhat diminished even if a high income is attained, and even more diminished if it is not. Kirkcaldy et al. (1998) found that SWB was lower in nations where, on average, people cared most strongly about material gains (see also Kasser and Kanner 2004). Again, the clear implication is that people would be well advised to give higher priority to non-economic concerns.

A key point is that Easterlin, Diener and others who have suggested that higher priority should be given to non-economic domains have *not* shown that doing so actually contributes to SWB. Is it actually the case that people who give higher priority to non-economic and non-competitive goals than to the economic domain are happier? Or, to put it longitudinally, does it actually work out that, if individuals consistently give priority to non-economic goals, rather than economic goals, they have more chance of increased SWB? In this context, it is worth noting that brain imaging research appears to indicate that altruistic and cooperative behaviours, especially if reciprocated, are directly gratifying and stimulate the same areas of the brain as sexual activity and other pleasurable interactions (Rilling et al. 2004). Further, studies specifically relating to volunteering and other similar forms of altruistic community activity show that volunteering is associated with high SWB (Harlow and Cantor 1996; Thoits and Hewitt 2001).

[2] Easterlin's view is that Mehnert et al's (1990) results, because they are based on a large scale panel study, are clearly preferably to the results reported in studies which show nearly complete adaptation to disability (see above).

The SOEP allows us to investigate ideas about the relative impact on SWB of giving priority to different goals and life domains. However, in formulating specific hypotheses, the distinction made here is not exactly between economic and non-economic domains but between zero sum and non-zero sum domains. It seems plausible to suggest that the key distinction lies not between economic domains versus others, but between zero sum competitive domains in which one person's relative gain is another person's relative failure, versus non-zero sum domains in which one person's gain can be independent of or actually promote the gains of others. So, in general but not necessarily always, goals related to wealth, income and consumption, or to career success, or to social status are zero sum. Plainly goals related to family life tend to be non-zero sum, as are goals related to volunteering and non-competitive social activities.

In stating the following hypotheses in terms of zero and non-zero sum goals, this paper somewhat diverges from Easterlin and is closer to Hirsch (1976) and Frank (1985), who both wrote in terms of 'positional' and 'non-positional' goods.

1.1 Hypotheses

The first two hypotheses propose cross-sectional relationships between life goals and life satisfaction. The third hypothesis is dynamic; it proposes that *persistence* in pursuing non-zero sum goals enhances a person's prospects of long term gain in life satisfaction.

1.1 The greater the importance/priority individuals attach to non-zero sum goals, the higher their life satisfaction.
1.2 The greater the importance/priority individuals attach to zero sum goals, the lower their life satisfaction.
2. On average, satisfaction scores are higher in non-zero sum life domains than in zero-sum domains (indicating that more people can hope to achieve high satisfaction in these domains).
3.1 Individuals who *persistently* attach high importance/priority to non-zero sum goals are more likely than average to record gains in life satisfaction over the long term.
3.2 Individuals who *persistently* attach high importance/priority to zero sum goals are more likely than average to record losses in life satisfaction over the long term.

The first pair of hypotheses simply state that those who endorse and, by assumption, pursue non-zero sum goals will be found to have higher levels of life satisfaction than those who pursue zero sum goals. The second hypothesis says that average satisfaction scores will be found to be higher in what may be characterized as non-zero sum domains (domains pertaining to family life, personal relationships and non-competitive social activities) than in zero sum domains (work, financial domains). If this hypothesis is confirmed, the obvious but not easily provable explanation will be that it is easier for most people to be well satisfied in domains which are non-competitive than in domains where there are bound to be many losers as well as some winners. The final pair of hypotheses essentially restate the first pair in longitudinal rather than static terms. It is proposed that people who persistently over the years report that they give priority to non-zero sum goals (and who, by assumption, persistently pursue such goals) are more likely to record long term gains in life satisfaction than people who persistently give relatively greater weight to zero sum goals.

2 Methods

2.1 Samples

2.1.1 SOEP Survey

The SOEP is the longest-running panel survey in the world to collect data on life satisfaction (Wagner et al. 2007). It began in 1984 in West Germany with a sample of 12,541 respondents. Interviews have been conducted annually ever since. Everyone in the household aged 16 and over is interviewed. The cross-sectional representativeness of the panel is maintained by interviewing 'split-offs' and their new families. So when a young person leaves home ('splits off') to marry and set up a new family, the entire new family becomes part of the panel. The sample was extended to East Germany in 1990 and since then has also been boosted by the addition of new immigrant samples, a special sample of the rich, and recruitment of new respondents partly to increase numbers in 'policy groups'. The main topics covered are family, income and labour force dynamics, but a question on life satisfaction has been included every year. The longitudinal data used in this paper relate to the 3553 respondents who reported their levels of life satisfaction and life goals in 1990, 1995 and 2004, and then also answered questions relating to personality traits in 2005. The cross-sectional sample sizes are much larger and have been increasing due to the sample boosts described above. In 2004—the latest year in which data on life goals were collected—just over 20,000 respondents answered the relevant questions.

2.1.2 HILDA Survey (Household Income and Labour Dynamics, Australia)

Additional data to test Hypothesis 2 come from the Australian HILDA Survey. HILDA is commissioned by the Australian Government and conducted by the Melbourne Institute at the University of Melbourne. It is a nation-wide household panel with a focus on issues relating to families, income and employment. Described in more detail in Watson and Wooden (2004), the HILDA Survey began in 2001 with a national probability sample of about 6,000 households (15,000 individuals) occupying private dwellings. All household members aged 15 and over are interviewed annually. As in SOEP, the representativeness of the panel is maintained by following 'split-offs'.

Only 2004 data are used in this paper; in that year the sample size was 12,408. The items used relate to life satisfaction and satisfaction with various domains of life (see below).

2.2 Measures

2.2.1 Life Satisfaction and Domain Satisfactions

The dependent (outcome) variable in all equations is life satisfaction measured in both SOEP and HILDA on a 0–10 ('totally dissatisfied' to 'totally satisfied') scale. This single item measure is plainly not as reliable or valid as multi-item measures of SWB, but it is widely used in international surveys and has been reviewed as acceptably valid (Diener et al. 1999). Also used from the HILDA Survey are measures of satisfaction with the domains of marriage, children, 'your financial situation' and 'your pay'. These are also measured on a 0–10 satisfaction scale.

2.2.2 *Life Goals*

Prior to SOEP's venture into the field, several other researchers had attempted to measure life goals/priorities and had struck problems. In a very thorough investigation, two pioneers of SWB research, Andrews and Withey (1976) reported that measures of the priority attached to goals, asked on scales running from 'very important' to 'not at all important', appeared to suffer from social desirability bias, with respondents all giving high ratings to family goals. Importance scores also had low test–retest reliability. A further possible problem was that importance scores and satisfaction scores in particular life domains turned out to be moderately correlated. This might mean that people were quite good at getting what they wanted in life—a result in line with economists' utility maximization assumption—or might suggest some reverse causation, with respondents tending to impute importance to domains they were already well satisfied with, perhaps as a psychological mechanism to boost their overall life satisfaction (Andrews and Withey 1976). In general, respondents whose life satisfaction was high tended to rate most domains as very important, whereas unhappy or depressed respondents tended (presumably as a consequence of unhappiness) to rate most domains as relatively unimportant (see Appendix 1). An underlying problem, which may account for specific measurement difficulties, is probably that most people are not of a philosophical bent and do not regularly think about their life priorities.

The SOEP research group has made considerable improvements in goal measurement and, in particular, items have been developed which have a stable factor structure and adequate test–retest reliability (Wagner and Schupp 2007). Goals have been measured intermittently (rather than annually) in SOEP, starting in 1990. The items are based (although with some changes of wording) on a classification of goals and measures initially developed by Kluckhohn and Strodtbeck (1961). The instrument set out to measure three sets of goals:

- materialism, achievement and success,
- family life: marriage, children and the home,
- altruism: friendship, helping others, social and political activism.

This approach represents a considerable improvement on most other measurement efforts which tended to list miscellaneous goals relating to many domains of life, rather than starting with an a priori classification.

The SOEP survey managers have varied the specific questions asked in different waves of the survey; here we will use data from the 1990, 1995 and 2004 surveys in which the questions were nearly identical. In these three waves 9 or 10 items were included,[3] all asked on a 1–4 scale running scale running from 'very important' to 'not at all important'. In each wave the items formed three distinct, replicating factors: a *success goals* factor, a *family goals* factor and an *altruistic goals* factor. Success goals may be viewed as zero sum, whereas family goals and altruistic goals are non-zero sum. Factor analysis results for 2004 are shown in Table 1; very similar results for 1990 and 1995 are given in Appendix 2. It should also be noted that results were virtually identical for men and women.

Because the focus of the paper is on the impact of different categories of life goals on life satisfaction, it was decided that, for subsequent analysis, it would be preferable to retain only those items which both substantively and statistically clearly related either to

[3] Ten items were included in 1990 and 1995 and then nine in 2004. The item dropped in 2004 related to the importance of having a wide circle of friends, which loaded on the altruism factor.

Table 1 Factor analysis of life goals in SOEP 2004: varimax rotation (N = 20,362)

The importance of...	Zero sum goal: success	Non-zero sum goal: family life	Non-zero sum goal: altruism
Being able to buy things	0.71		−0.31
Fulfilling your potential	0.71		
Success in job	0.70		
Travel	0.53		0.32
Having children		0.77	
Having a good marriage		0.74	
Having a car		0.63	
Being involved in social and political activities			0.81
Helping other people		0.37	0.44

The three factors had eigenvalues of 2.27 (success), 1.54 (family) and 1.01 (altruism) and together accounted for 53.6% of the variance. Factor loadings under 0.3 are not shown

zero sum or to non-zero sum goals. So we constructed a *success goals* index which gave equal weight to 'being able to buy things', 'fulfilling your potential' and 'success in job'. The item relating to travel was dropped, primarily on grounds of face validity; a desire to travel does not obviously relate to a desire for success.[4] Similarly a *family goals* index was constructed which gave equal weight to the marriage and children items. The item relating to owning a car was dropped because it is not plainly related to family goals. Finally, the *altruistic goals* index gave equal weight to 'being involved in social and political activities' and 'helping other people'.[5]

It should be noted that alternative scoring procedures, using all the items in Table 1, either in the form of indices or as factor scores, yielded results substantively much the same as those given in the Results section.[6]

For inclusion in regression analyses, scores on the three indices were split at the mean, with respondents who rated above the mean being given a score of one and those rating at or below the mean a score zero. This dummy variable approach was adopted because it was clear that, while relationships between importance scores and life satisfaction were linear, it was *not* the case that the importance scales functioned as equal interval scales with respect to life satisfaction. So regression coefficients based on an assumption of equal intervals would have been misleading.[7]

In view of earlier reports that importance scores have low reliability, it is of interest that in SOEP they appear to be moderately stable; or at least about as stable as life satisfaction measures. For example, the correlation between life satisfaction measured in 1995 and 2004 was 0.41, whereas for the importance of success goals it was 0.49, for family goals 0.49 and for altruistic goals 0.41.[8] Of course, these 9 year correlations should be regarded

[4] The item relating to 'fulfillment' seemed borderline in terms of face validity but loaded so strongly on the success factor in 1990, 1995 and 2004 that it was decided to retain it.

[5] The item 'having a circle of friends' was included in 1990 and 1995 and also loaded on this factor.

[6] However, as is often the case, results using factor scores were somewhat weaker (smaller effect sizes).

[7] In practice, however, regression coefficients for the three indices were quite similar whether they were split at the mean or whether the full scale was used.

[8] These correlations are based on the 1–4 importance scales rather than a dichotomized index. Similarly, the correlation for life satisfaction is based on the full 0–10 scale.

as stability measures, not as measures of test–retest reliability, but it is reasonable to infer that most respondents' life priorities are not subject to excessive and implausible fluctuations.

2.2.3 *Personality Traits*

In 2005 SOEP included measures of personality traits for the first time. The chosen instrument was a short version of the Big Five Personality Domains—NEO-AC (Costa and McCrae 1991). The traits in the Big Five are extraversion, neuroticism, openness, agreeableness and conscientiousness. SOEP used short versions of the five scales which are reported to be satisfactorily correlated with the much longer versions developed by psychologists (Gerlitz and Schupp 2005).

For present purposes the inclusion of personality traits is a bonus because it is certain that some traits, notably extraversion and neuroticism, are related to life satisfaction and so should be 'controlled' on the right hand side of equations in which the aim is to assess the impact of life goals on life satisfaction. Psychologists usually take the view that personality is at least 50% hereditary, so it should clearly be regarded as temporally and causally antecedent to life goals (Lykken and Tellegen 1996). In the equations in the Sect. ''Results'' extraversion and neuroticism are included on the right hand side. Inclusion of the other traits (openness, agreeableness and conscientiousness) had no clear theoretical justification and, in the event, made no substantive difference to results.

Also included in SOEP in 2005 was a measure of locus of control. The concept of locus of control was originally formulated by Rotter (1966). The scale used in SOEP was developed for German language use by Krampen (1981; see also Nolte et al. 1996). People who have an internal locus of control believe that they can to a considerable degree control their own lives, that success or failure are in their own hands. Other people tend to believe either that their lives are strongly influenced by powerful others (external locus), or that success and failure are due to chance/luck/destiny.

There are theory-based reasons for believing that success in the pursuit of life goals may be related to internal locus. People with high internal locus tend to be persistent in pursuit of goals and to have relatively good coping skills (Lazarus and Folkman 1984). By contrast, people who rate high on external locus of control tend to believe that outcomes are due to luck or the influence of powerful others.

It should be stressed that, by including personality traits measured in 2005 on the right hand side of equations to account for life satisfaction in earlier years, we are in effect assuming that personality is stable. If it were completely stable, then of course it would not matter when it was measured. However, the assumption is not completely correct. It is thought that ratings on personality traits can be changed to a moderate degree by life experiences like having a stable marriage or an absorbing job (Roberts et al. 2006; Scollon and Diener 2006).

3 Results

Hypotheses 1.1 and 1.2 propose that, other things equal, giving high priority to non-zero sum goals enhances life satisfaction, while giving high priority to zero sum goals lowers it.

Table 2 shows two regression equations, which just differ in terms of the number of 'controls' on the right hand side (Appendix 1 reports the bivariate correlations among all

Table 2 Impact of life goals on life satisfaction 2004: OLS regressions (metric coefficients)

Explanatory variables 2004	Dependent variable: life satisfaction 2004 (0–10)	
Family goals	0.32****	0.26****
Altruistic goals	0.18****	0.16****
Success goals	−0.08**	−0.09**
Gender	0.02	0.05
Age	−0.05****	−0.06****
Age squared/10	0.01****	0.01****
Extraversion	0.10****	0.09****
Neuroticism	−0.26****	−0.25****
Internal locus	0.47****	0.42****
Partnered (1–0)		0.23****
Years of education		−0.00
HH disposable income/1,000		0.02****
Health disability (1–0)		−0.60****
N	8,271	8,026
Adj. R^2	13.1%	15.8%

* Significant at 0.10,
** Significant at 0.05,
*** Significant at 0.001,
**** Significant at 0.01

main variables). It could be argued that, in assessing the impact of life goals on life satisfaction, one should only control for gender, age and personality traits. Clearly, gender and age should be viewed as causally prior to life goals in their effects on life satisfaction; so, too, are personality traits since they are thought to be at least 50% hereditary.[9] Other variables, including marital/partnership status, educational attainment, income[10] and health disability all affect life satisfaction but might be partly a consequence rather than a 'cause' of life goals. These additional variables are included in the second equation, and make little difference to results, but to the extent that they may be consequences not causes, their inclusion is not justified.

Results are given for life satisfaction measured in 2004. Appendix 2 gives parallel results for 1990 and 1995. It should be noted that ordinary least squares (OLS) regression was used, even though the life satisfaction measure is strictly speaking an ordinal rather than an interval scale. As in much previous research, starting with Andrews and Withey (1976), it was found that OLS and ordinal scale results were very similar, and OLS has the advantage of being more familiar and easy to interpret.

Both equations show that a high level of life satisfaction is quite strongly associated with giving high priority to family goals, and significantly associated with high priority for altruistic goals. Attaching importance to success goals appears to have a small but statistically significant detrimental effect.

Extraversion and neuroticism have their expected positive and negative effects, respectively, on life satisfaction, although as is usually the case the impact of extraversion

[9] However, this may not be true of internal locus of control, which seems more likely to be modified by experience (Rotter 1966).

[10] The measure of income used is household disposable income adjusted for household size; i.e. equalized using the OECD equivalence scale of 1.0 for the household reference person, 0.5 for other adults and 0.3 for children under 15.

Table 3 Impact of life goals on life satisfaction 2004—men, women and prime age: OLS regressions (metric coefficients)

	Dependent variable: life satisfaction 2004 (0–10)		
	Men	Women	Prime age (25–59)
Family goals	0.37****	0.26****	0.36****
Altruistic goals	0.14**	0.21****	0.21****
Success goals	−0.03	−0.12**	−0.08
Gender			0.08*
Age	−0.06****	−0.04****	−0.10****
Age squared	0.01****	0.00****	0.01****
Extraversion	0.10****	0.09***	0.05***
Neuroticism	−0.26****	−0.27****	−0.29****
Internal locus	0.42****	0.52****	0.52****
N	3,928	4,343	5,294
Adj. R^2	12.7%	13.5%	13.8%

* Significant at 0.10, ** Significant at 0.05, *** Significant at 0.01, **** Significant at 0.001

is quite small. The very strong association of satisfaction with internal locus of control is a striking, although not new finding (Diener and Lucas 1999).

Table 3 gives results men and women separately, and also for people of prime working age (25–59).[11] The reason for analysing prime age people separately is to eliminate the possibility that results are, in a sense, distorted by inclusion of older people who, in some cases, might find it absurd to talk about life goals (or perhaps just success goals) in the later part of their life.

It can be seen that results are broadly the same for both sexes and for prime age people. Family goals and altruistic goals clearly have significant positive effects for both men and women. However, the negative effect of success goals is only statistically significant (at the 0.05 level) for women, although the sign of the coefficient is also negative for men.

Hypothesis 2, in effect, claims that it is preferable to pursue non-zero sum goals because, in the absence of competition, it is easier to achieve a high level of satisfaction than is the case in pursuit of zero sum (competitive) goals. In order to test this hypothesis, we need to be able to determine which of the life domains asked about in SWB surveys can be regarded as non-zero sum, and which are zero sum. Marriage and family life would, in general, appear to be non-zero sum.[12] Unfortunately, no large scale surveys have been found which ask people about their satisfaction with activities like volunteering, which relate to altruistic goals. Turning to zero sum goals, it is presumably reasonable to designate 'material standard of living' and some aspects of one's job, notably pay and promotion, as competitive zero sum domains.

The only clearly relevant life domain covered in the SOEP is satisfaction with household income; no non-zero sum domains are covered at all.[13] So here we report data from

[11] Only the first of the two equations in Table 2 is reproduced for these sub-groups. Results were little different with extra 'controls', as in the second of the equations.

[12] A person could, of course, have competitive non-zero sum goals with regard to marriage; e.g. wanting to marry a wealthy heiress.

[13] Job satisfaction has been included in SOEP from inception, but in the present context it is an ambiguous life domain, since it offers prospects of achieving both success goals, and (at least for some people) altruistic goals. Satisfaction with family life was introduced for the first time in 2006.

Table 4 Comparing satisfaction in non-zero sum and zero sum life domains: Australian (HILDA) Panel Survey 2004

	Children	Partner	Life satisfaction	Pay for job	Financial situation
All	8.4	8.1	**7.9**	6.8	6.4
Men	8.3	8.3	**7.9**	6.8	6.4
Women	8.5	8.0	**8.0**	6.9	6.4
Prime age	8.3	8.0	**7.8**	6.8	6.2

All items measured on a 0–10 scale

Source: HILDA Panel Survey (2004). Ns for the total sample: partner satisfaction (N = 8,112), satisfaction with children (N = 7,568), life satisfaction (N = 12,396), financial situation (N = 12,401) and satisfaction with pay for job (N = 7,804)

the on-going HILDA Australian panel survey, which includes the items shown in Table 4: satisfaction with 'your relationship with your partner', 'your relationship with your children', 'your financial situation', and the amount of pay you receive for your job. The last measure is included as a proxy for one of the success goals discussed above, namely 'success in your job'. Results are shown for the total sample, then separately for men, women and the prime age population. In order to provide a yardstick for comparison, overall life satisfaction scores are also shown; one can then immediately see for which domains respondents record satisfaction scores above the mean level for life satisfaction, and for which domains scores are relatively low.

It is clear that satisfaction scores for the two non-zero sum domains are considerably higher than for the zero sum domains. Scores in the non-zero sum domains are above average life satisfaction scores, while scores in the zero sum domains are below the life satisfaction average. Further, the differences between scores for the total sample and all sub-sets in both non-zero sum domains are significantly higher (at the 0.001 level) than in both zero sum domains.[14]

It should also be mentioned that all SWB studies in which comparisons can be made appear to show that satisfaction is higher in family related domains than in zero sum domains related to material standard of living and work. Results on these lines were reported in two of the earliest SWB studies from the University of Michigan (Andrews and Withey 1976; Campbell et al. 1976) and have been noted in several major reviews of SWB research (Veenhoven 1993; Diener et al. 1999; Argyle 2001).

We revert to using the SOEP data to test Hypothesis 3. Given that we have found cross-sectional associations between pursuit of non-zero sum goals and life satisfaction, it is reasonable to hypothesize that persistence in pursuit of these goals may bring about long term gains in life satisfaction. By the same token, persistence in pursuit of zero sum goals may generate a decline in satisfaction.

The measures of persistence used here are simply average scores on the family goals, altruistic goals and success goals indices in the years 1990, 1995 and 2004 combined.[15] Our measure of change (gains, losses) in life satisfaction is average life satisfaction in the

[14] In principle the results in Table 4 could be subject to selection bias in that the sub-samples differ. That is, results are given for the different sub-sets of respondents who had partners, children and a job. It should be noted that a separate run, restricting the sample to those who gave responses for all life satisfaction and all four life domains, yielded almost identical results.

[15] As with previous measures of life goals, these average scores have been dichotomized at the mean for inclusion in regression equations.

Table 5 Impact of persistence in pursuit of life goals on change in life satisfaction (LS) between 1990–1992 and 2002–2004: OLS regressions (metric coefficients)

	Dependent variable: change in life satisfaction (LS) $LS_{2002-2004} - LS_{1990-1992}$	
Family goals (mean score for 1990, 1995 and 2004)	0.04	0.01
Altruistic goals (mean score for 1990, 1995 and 2004)	0.13***	0.13***
Success goals (mean score for 1990, 1995 and 2004)	−0.14***	−0.12***
Gender	0.06	0.07*
Age	−0.01	−0.03***
Age squared/10	0.00	0.00***
Extraversion	0.09****	0.08****
Neuroticism	−0.20****	−0.20****
Internal locus	0.32****	0.28****
Life $satisfaction_{1990-1992}$	−0.53****	−0.57*****
Partnered (1–0) 2004		0.17****
Years of education 2004		0.01
HH disposable income 2004		0.01****
Health disability 2004		−0.47****
N	3,553	3,553
Adj. R^2	25.5%	27.7%

* Significant at 0.10, ** Significant at 0.05, *** Significant at 0.01, **** Significant at 0.001

three years 2002–2004 minus average scores in 1990–1992. Obviously the time period is chosen to cover the full period in which measures of life goals have been collected, and to maximize the length of time in which gains and losses of life satisfaction could have occurred. The reason for using 3—year average scores for life satisfaction is to get a medium term measure of life satisfaction, and avoid being at the mercy of transitory annual fluctuations (for an identical approach, see Fujita and Diener 2005).

Table 5 gives results for an equation with just gender, age and personality traits on the right hand side, and a second equation in which marital status, educational attainment, household income and disability status are also included. Note that $life\ satisfaction_{1990-1992}$ is also included on the right hand side, because it was substantially negatively correlated with the dependent variable.

The results for both equations are only partly in line with expectations. The link between persistence in pursuit of altruistic goals and gains in life satisfaction is significant and positive, and the link between persistently pursuing success goals is significant and negative. However, no relationship was found between persistence in pursuing family goals and changes in life satisfaction. This may be a genuine negative result, or it could be related to the due to the fact that average scores on the family goals measure are very high and also have a low variance, probably in part due to social desirability. So there is limited prospect of finding an association between priority for family goals and a dependent variable—change in life satisfaction—which also has limited variance.[16]

[16] The mean score on the measure of persistence in pursuit of family goals (1–4 scale) was 3.43 with a standard deviation of 0.52. The mean score on change in life satisfaction (0–10 scale) was —0.62 with a standard deviation of 1.46.

The results showing that extraversion and neuroticism predispose people to changes in life satisfaction were reported in previous papers (Headey 2006a, b). The result relating to internal locus of control is somewhat new and could be interpreted as being in line with the expectations of personality theorists who have developed this and similar scales (Rotter 1966; Bandura 1997; Seligman 2002). Their view is that, in order to make progress in any field, people need to be characterized by internal rather than external locus of control. Internal locus is related to persistence in pursuit of goals, and to having effective coping skills to deal with setbacks.

4 Discussion

Surveys are not ideal instruments for measuring life goals/priorities, because priorities require careful thought and a review of alternative contexts in which they might be applied. Surveys are even less ideal for measuring behaviours related to goals. In this paper, it has just been assumed that survey respondents who rate particular goals as important to them actually behave as if they are seeking to pursue those goals. Nevertheless, despite measurement difficulties and strong assumptions, it appears that goals relate in theoretically interesting and plausible ways to life satisfaction.

What makes for a happy person? Part of the answer seems to be a personality characterized by a high level of extraversion and a low level of neuroticism, coupled with a desire to pursue non-zero sum family related and altruistic goals. On the evidence in this paper such a person is likely to be happier in the first place, and to have a reasonable prospect of becoming happier over time. The role of internal locus in interesting in this context. Internal locus is probably best not thought of as a more or less fixed personality trait like extraversion or neuroticism (Rotter 1966; Seligman 2002). It is a disposition to take responsibility for one's own achievements and failures, and this is associated with persistence/perseverance and good coping skills. It is tempting to suggest that internal locus may be the link—the link in terms of perseverance and skills—between having non-zero sum goals, pursuing them effectively and increased life satisfaction.

Results showing that some personality traits and skills, and some life goals, improve a person's chances of increased life satisfaction—while other attributes are damaging—mean that the set-point or dynamic equilibrium theory of SWB needs revision. It is clear that most people stay fairly close to their set-points for long periods, but non-trivial minorities record substantial changes (see also Headey 1996a, b). It now seems likely that these changes are not always or not entirely the result of major life events. They appear to be explicable partly in terms of personality and goals.

There are many unresolved issues in assessing the relationship between life goals and SWB. One relates to adaptation. Easterlin (2005) cites a good deal of evidence to show that people more or less completely adapt to improvements in their economic circumstances, so that no satisfaction/utility gain accrues. It is something of a puzzle that complete adaptation appears not to occur in non-zero sum domains. After all, it is conceivable that people whose marriages improved, or whose altruistic activities showed benefits would just keep on raising their aspirations, so that (as in the economic domain) the gap between achievements and aspirations scarcely narrowed. Easterlin's speculation is that incomplete adaptation in these domains is due to the fact that they are less open to social comparison than the economic domain. This does not seem particularly plausible. The state of the Jones's marriage, children, health and even their altruistic social activities may be just

about as accessible to inquisitive neighbours as their economic circumstances. Perhaps a more plausible speculation is that gains in zero sum domains are not satisfying because of the competition involved; all you have got to look forward to after one set of goals is achieved is renewed competition. By contrast, an improving family life or satisfying social activities may be found intrinsically satisfying. Further, one is likely to receive positive feedback from family members and other people closely affected.

Another important issue for further research is the possible two-way link between life goals and SWB. In this paper we have treated goals as causally related to life satisfaction. But the causation may run partly the other way round. It seems possible, for example, that a person whose marriage had recently split up might be at least temporarily convinced that his/her career was paramount and that marriage did not matter. Issues of two-way causation are always extremely difficult to resolve, and cannot sensibly be tackled with panel data on life goals collected at irregular intervals, as the SOEP data have been. However, if annual panel data were available, there would be a stronger possibility of resolving the issue.

In future research it would be highly desirable to use a more rigourous method of determining life goals. An experimental setting in which subjects were required to make a series of carefully planned, graduated choices might be one way forward. Such experiments are now quite commonly done by economists to assess such characteristics as risk-taking versus risk aversion, and propensity to engage in reciprocal, cooperative behaviours (Kagel and Roth 1995; Dohmen 2005).

To restate the main point: the results in this paper indicate that the set-point or dynamic equilibrium theory of SWB needs to be and can be revised to take account of the effects of personality and life goals on medium to long term change in SWB.

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Appendix 1

Table 6 Bivariate Pearson correlations among main variables

Life satisfaction	1.00						
Family goals	0.11	1.00					
Altruistic goals	0.15	0.24	1.00				
Success goals	0.07	0.07	0.24	1.00			
Extraversion	0.14	0.09	0.18	0.16	1.00		
Neuroticism	−0.25	0.05	−0.03	−0.07	−0.13	1.00	
Internal locus	0.30	0.07	0.13	0.10	0.22	−0.33	1.00

Appendix 2

Table 7 Factor analysis of life goals in SOEP 1990: varimax rotation (N = 6,319)

The importance of...	Zero sum goal: success	Non-zero sum goal: family life	Non-zero sum goal: altruism
Being able to buy things	0.70		
Fulfilling your potential	0.62		0.33
Success in job	0.70		
Travel	0.54		0.30
Having children		0.71	
Having a good marriage		0.78	
Owning a home		0.61	
Having a circle of friends			0.62
Being involved in political activity			0.63
Being there for other people		0.34	0.61

The three factors had eigenvalues of 2.41 (success), 1.57 (family) and 1.12 (altruism) and together accounted for 51.0% of the variance. Factor loadings under 0.3 are not shown

Table 8 Factor analysis of life goals in SOEP 1995: varimax rotation (N = 10,295)

The importance of...	Zero sum goal: success	Non-zero sum goal: family life	Non-zero sum goal: altruism
Being able to buy things	0.71		
Fulfilling your potential	0.68		
Success in job	0.69		
Travel	0.51		0.33
Having children		0.78	
Having a good marriage		0.72	
Owning a home		0.63	
Having a circle of friends			0.71
Being involved in social and political activities			0.62
Being there for others			0.57

The three factors had eigenvalues of 2.49 (success), 1.48 (family) and 1.13 (altruism) and together accounted for 51.0% of the variance. Factor loadings under 0.3 are not shown

Table 9 Impact of life goals on life satisfaction 1990: ordinary least squares regressions

	Dependent variable: life satisfaction 2004 (0–10)	
Family goals	0.24****	0.17**
Altruistic goals	0.12*	0.14**
Success goals	−0.08	−0.08
Gender	0.08	0.20****
Age	−0.05****	−0.06****
Age squared/10	0.01****	0.01****
Extraversion	0.03	0.03
Neuroticism	−0.13****	−0.12****
Internal locus	0.36****	0.33****
Partnered (1–0)		0.38****
Years of education		0.02*
HH disposable income/1,000		0.01***
N	3,955	3,368
Adj. R^2	5.8%	7.5%

Health disability is not included, because the measure is not available for 1990

* Significant at 0.10, ** Significant at 0.05, *** Significant at 0.01, **** Significant at 0.001

Table 10 Impact of life goals on life satisfaction 1995: ordinary least squares regressions

	Dependent variable: life satisfaction 2004 (0–10)	
Family goals	0.34****	0.28****
Altruistic goals	0.22****	0.23****
Success goals	−0.16****	−0.13***
Gender	0.04	0.04
Age	−0.10****	−0.10****
Age squared/10	0.01****	0.01****
Extraversion	0.05***	0.05***
Neuroticism	−0.16****	−0.17****
Internal locus	0.39****	0.35****
Partnered (1–0)		0.29****
Years of education		−0.01
HH disposable income/1,000		0.01****
N	7,267	7,264
Adj. R^2	8.5%	11.0%

Health disability is not included, because the measure is not available for 1995

* Significant at 0.10, ** Significant at 0.05, *** Significant at 0.01, **** Significant at 0.001

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