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THE SET-POINT THEORY OF WELL-BEING NEEDS REPLACING – ON THE BRINK OF A SCIENTIFIC REVOLUTION?*

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Summary

Set-point theory has dominated the field of subjective well-being (SWB). It has served as a classic Kuhn research paradigm, being extended and refined for thirty years to take in new results. The central plank of the theory is that adult set-points do not change, except just temporarily in the face of major life events. There was always some 'discordant data', including evidence that some events are so tragic (e.g. the death of one's child) that people never recover back to their set-point. It was possible to dismiss these events as 'exceptions' and maintain the theory. However, several new findings are now emerging, which it is increasingly difficult to dismiss as 'exceptions' and which appear to require substantial revisions or replacement of set-point theory. Many of these findings are based on data from the German Socio-Economic Panel Survey (SOEP, 1984 -) which provides clear evidence of large, long term changes in the set-points of substantial minorities of the population.

This paper reviews recent findings and highlights lines of theory development which, at minimum, represent substantial revisions to set-point theory and which may perhaps lead to replacement of the paradigm. There is evidence to suggest that individuals with certain personality traits are more likely to record long term change in SWB than others. Also, SWB appears to depend partly on choice/prioritisation of some life goals rather than others. Pursuit of non-zero sum goals (family and altruistic goals) leads to higher SWB than pursuit of zero sum goals (career advancement and material gains). Both these new lines of theory appear promising and the second, in particular, cannot sensibly be reconciled with set-point theory.

Introduction

The set-point theory of SWB, under various confusing and changing labels, has dominated the field for 30 years. It has become the *paradigm theory* (Kuhn, 1962) of SWB research. One motivation for this paper is to give reasons for believing that the theory needs serious revision and perhaps replacement. Perhaps we need - or are on the brink of - a scientific revolution. So a second aim of the paper is to give some indications about alternative theories which may be emerging to replace set-point theory.

Let me flag immediately why set-point theory is in trouble. Its central proposition is that *adult individuals have differing but stable levels of SWB*; levels substantially due to personality traits and other factors which are partly hereditary or determined early in life. Adult SWB is not supposed to change. Major life events can cause deviations from the set-point but their effects are usually transitory and, after a period of 'deviation', people return to their previous set-points.

The key challenge to set-point theory comes from evidence in the German Socio-Economic Panel (Wagner, Frick and Schupp, 2007). The panel has run for over 20 years and provides the first longitudinal data set which enables us directly to test the central proposition of the theory, namely that adult SWB really is stable.[1] The SOEP data show that close to 20% of a national representative sample have recorded substantial and apparently more or less permanent changes in their life satisfaction during the last 20 years. About 6% recorded gains of 2 or more points (close to 1.5 standard deviations) on a 0-10 life satisfaction scale, and more than twice that number – about 13% - recorded substantial and apparently permanent declines. Changes of this magnitude recorded by close to one fifth of a national sample are really not compatible with set-point theory as currently understood. What is more these changes

[1] We all have Wolfgang Zapf to thank for insisting that SOEP, at its inception, should include measures of life satisfaction and domain satisfactions (Wagner, 2007).

have occurred in peacetime and during a period in which there has been no serious economic slump.

One final introductory point – or really an editorial point. Perhaps nobody shed tears over set-point theory. Arguably, it is stultifying. From a research standpoint, it implies that once we have identified the stabilising characteristics which keep people close to or returning to their set-points, there is not much more to be done. It also implies – depressingly - that it is very unlikely that adults, and especially older people, can become happier or do anything much to improve their own happiness. Nor can Governments help. So if set-point theory is overturned, that will be good for researchers, and possibly even for the human race. It will open up the whole field of SWB research again, and lead to a search for the causes of long term change and improvement in SWB.

History of a paradigm: why set-point theory looked so convincing and became so dominant

Set-point theory has appeared so convincing because it developed in a cumulative fashion with layer on layer of evidence supporting it and making it seem more compelling in its account of links among three sets of variables: stable person characteristics including personality traits, life events and measures of well-being (life satisfaction, positive affect) and ill-being (anxiety, depression and stress).

The cumulativeness of development has been somewhat disguised – perhaps heavily disguised - by the propensity of researchers to give new labels to revised versions or extensions of previous theory. In particular, it should be noted that at least five other labels have been used to describe what has developed into and is now generally known as set-point theory: adaptation level (AL) theory, personality theory, dynamic equilibrium theory, multiple discrepancies theory and homeostatic theory.

Brickman and Campbell (1971) initiated developments by proposing an *adaptation-level (AL) theory* of well-being. They observed that most individuals returned to 'baseline' (later termed 'equilibrium level' or 'set-point'), even after what would previously have been thought of as life changing events. The sentence 'we are all on an hedonic treadmill' summarised the findings of their research. Brickman, Coates and Janoff-Bulman (1978) claimed that the hedonic treadmill concept still applied even in the case of people who became paraplegics or won large sums in a lottery, although their evidence is open to serious objections (see below).

Not long after Brickman and Campbell first proposed an AL theory of SWB, Richard A. Easterlin (1974) claimed that it worked beautifully in the economic domain of life. The famous Easterlin Paradox says that economic growth does not improve the human lot – or at least does not increase happiness – because people adapt completely to improved fortunes, if everyone around them is going about equally well. (The second part of the Paradox is that people just feel slightly happier if they are relatively well off compared with others in their own society).

The next major development came when Costa and McCrae (1980) proposed a *personality theory of SWB.* They showed that individuals have differing SWB baselines or set-points partly due to differences in scores on the stable personality traits of extroversion (E) and neuroticism (N). Extroverts rated higher on SWB than introverts and relatively neurotic people rated lower than emotionally stable individuals.

Headey and Wearing (1989, 1992) sought to extend SWB theory by linking personality, life events and SWB in what they termed *dynamic equilibrium theory.* Using data from an Australian panel study, they observed that history repeats itself in people's lives, that the same life events tend to keep happening to the same people. It was inferred that events must be partly endogenous, and not as previously supposed entirely exogenous. That is, the events which happen to a person must be partly driven by his/her stable characteristics. It was shown that extroverts tend to experience many positive events and that neurotic individuals experience many negative events (see also Magnus et al, 1993).[2] Further, extroverts tend to magnify the impact of positive events, extracting greater satisfaction from them than others (Lucas and Baird, 2004). Similarly, neurotic people magnify the impact of adverse events (Larsen, 1992). People who rate high on both E and N – recall that the two traits are uncorrelated – experience many events of both kinds, and people who rate low on both E and N experience few events of both kinds. The personality trait of openness to experience (O) is also implicated. People who rate high on O report many positive *and* many negative events, while people who rate low on O report few events of either kind (Headey and Wearing, 1989). However, O is not normally found to be directly related to SWB.

A key implication of Headey and Wearing's results is that, provided only a person's normal or predictable pattern of life events happens in any given time period, then

[2] Magnus et al (1993) replicated Headey and Wearing's (1989) results and confirmed that personality affects reports of relatively objective events (e.g. got married, became unemployed) and not just events which could be a matter of selective perception.

SWB will not change. A person's SWB changes only when events occur which are abnormal for him or her. Another implication is that if one knows three things about a person – his/her levels of E, N and O – then one can fairly well predict the sorts of events which will keep on happening to him/her. This pattern of results led Headey and Wearing to refer to 'equilibrium levels' of well-being and ill-being (rather than 'baselines' or 'set-points') and to conceive of personality, life events, well-being and ill-being as being in dynamic equilibrium.

Some researchers have downplayed the significance of individual differences in SWB and focused on the fact that the very large majority of people in countries all over the world report levels of SWB well above scale mid-points (i.e. more 'satisfied' than 'dissatisfied'). Multiple discrepancies theory (Michalos, 1985) and homeostatic theory (Cummins, 1995) are concerned with explaining this outcome and describing the mechanisms which keep it in place.

Lykken and Tellegen (1996) then developed what they termed the *set-point* theory of SWB. This too accounted for linkages between stable person characteristics, life events and SWB. Because their research was based on twin studies, they were able to show that heredity more generally, and not just the specific personality traits of E and N, was strongly related to SWB. In successive papers, using somewhat different approaches, they have claimed that genetic factors account for about 50% of the variance in SWB (Lykken and Tellegen, 1996), or perhaps close to 100% (Lykken, 1999, 2000). This last estimate plainly leads to the conclusion that SWB is more or less fixed for life and that neither individual efforts nor public policy can do much to enhance it.

Discordant evidence – first cracks in the theory

Even before set-point theory began to be questioned, there was some discordant evidence. It was clear that some life events are so adverse, so tragic that victims never recover back to their previous set-point. One such event is the unexpected death of a child (Wortman and Silver, 1987). It was easy to dismiss such unusual tragic events as 'rare exceptions' which did not require revision of the theory.

More difficult from the point of view of the theory, is Clark et al's (2004) evidence about repeated spells of unemployment. They show that repeated spells - although not a single spell - have a 'scarring effect' from which most people do not fully recover. Again it is possible to dismiss repeated unemployment as 'exceptional' (although it is not all that uncommon). More difficult is evidence about the potentially beneficial effects of marriage. Lucas et al (2003) showed that some people, although not most, achieve long-lasting and perhaps permanent gains in SWB as a result of getting married (see also Gottman, 1996). Researchers trying to salvage set-point theory could hardly claim that getting married is an exceptional event.

Entertainingly, another positive life event which has been shown to raise the SWB set-point is cosmetic surgery (Wengle, 1986; Frederick and Loewenstein, 1999). Cosmetic surgery is not all that uncommon either, especially in Los Angeles and Brazil.

The cracks widen – Easterlin does a U-turn

Easterlin (2005) appears to be the first to tackle set-point theory head-on and claim that it is seriously in error. In a recent review article he makes a sharp distinction between the economic domain of life and non-economic domains. As we saw earlier, his previous work gave key support to AL theory by showing that people completely adapt to gains in the economic domain, so that even big financial gains have little or no impact on SWB. He now reviews research relating to family life and health, concluding that in these domains complete adaptation does not occur, although partial adaptation does. In the family domain, he notes Lucas et al's (2003) research showing that some people who get married and stay married are happier in the long term. He adds the well known point that people who separate or who remain single are generally unhappier than partnered people.[3]

The evidence Easterlin adduces about the health domain is perhaps stronger. He cites a major North American survey, based on a national representative sample, which shows that 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). In the light of this research, Easterlin suggests that it is time for SWB researchers to stop relying on Brickman, Coates and Janoff-Bulman's (1978) results, cited earlier, relating to paraplegics. The difference in SWB found by these researchers between paraplegics and controls was in fact statistically significant, although the authors regarded it as 'surprisingly small'.[4]

Easterlin's opinion, derived from his review, 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

[3] This causation has always been open to dispute. People who separate and remain separated, or who are always single, almost certainly have different 'starting' characteristics and tastes from people who remain married.

[4] Their N was just 29.

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; Thoits and Hewitt, 2001; Nickerson et al, 2003).

Huppert (2005) has also contributed a review article seriously questioning set-point theory. Drawing on 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.

Huppert is also critical of Lykken's (2000) estimate that close to 100% of the variance in SWB could be due to genetic factors. This estimate depends on 9-year correlations of SWB recorded by twins. The total sample of twins recorded a 9-year correlation of 0.55. This is about the level of correlation that SWB researchers would expect over a 9-year period and would not seem to be decisive as confirmatory or falsificatory evidence in regard to set-point theory. The key finding in Lykken's view is that, within the sub-set of identical (MZ) twins, the scores of one twin at time 1 predicted the scores of his/her other twin nine years later almost as well as it predicted his/her own score (r=0.54 as compared to r=0.55). Since 0.54/0.55 is nearly 100%, this is what leads Lykken to conclude that, in relation to what he calls 'the stable component of well-being'… nearly 100% of the variation across people in the happiness set-point seems to be due to differences in genetic make-up!'

Huppert points out that this interpretation is dubious. If, instead of stressing the point which Lykken seizes on, one chose to emphasise the over-time correlations between scores of the same individuals – surely central to set-point theory – then one would conclude that scores at time 1 are only a moderately good predictor of scores nine years later, whether one uses the scores of twin 1 or twin 2. An even more fundamental point, in Huppert's view, is that it is mistaken to assume that individuals

with the same genes are bound to experience the same levels of SWB.[5] The same genes can express themselves (be turned on or turned off), depending on different life experiences, especially but not exclusively early childhood experiences (Huppert, 2005).

Citing the German SOEP results mentioned in the introduction to this paper, Fujita and Diener (2005) focussed on specific events associated with change, notably getting married, becoming widowed and becoming unemployed. Going beyond this, Diener, Lucas and Scollon (2006) recently published a review article on adaptation theory as advanced by Brickman and Campbell (1971). They made five main criticisms of the theory and suggested some revisions which would also apply to set-point theory as it is currently understood. In particular, they noted that evidence of medium and long term change in set-points needed to be incorporated into any revised theory (see also Scollon and Diener, 2006).

[5] This point is noted by Lykken (2000) but has been ignored by many other investigators in their commentaries on set-point theory.

Substantial amendments to set-point theory – going beyond references to 'exceptional events'

The next key step in theory development is to try and go beyond patching up set-point theory by reference to 'exceptional events' and see if the theory can be constructively revised, or even replaced by a theory which offers systematic explanations of why substantial numbers of individuals record long term changes in SWB. In taking some preliminary steps, SOEP data are used to modify theory in two ways:

(1) by showing that the personality traits of some individuals make them significantly more likely than others to record long term change in SWB, and (2) by showing that choice of life goals/life priorities is systematically related to differences in SWB and to changes in SWB over time.

The probability of major long term changes in SWB is predictable on the basis of personality traits E and N

In recent papers, using the German panel data, the present author has sought to revise set-point theory by attempting to explain why substantial minorities record long term change in SWB, even though the majority do not (Headey, 2006ab; Headey, in press). One new result, which really just comes from extending a previous line of thought, is that the people most likely to record large changes in life satisfaction are those who score high on the personality traits of extroversion (E), or neuroticism (N), or both. Trait O (openness to experience) may also be involved, but analyses including O will be postponed until later (see Table 2).

As noted, it is clear that people who score high on E actually experience more positive life events than other people, and that people who rate high on N record more adverse events (Headey and Wearing, 1989, 1992; Magnus et al, 1993). So people who score high on either trait – and, even more, people who score high on both - 'roll the dice' more often than others. It is reasonable to hypothesise that they have a higher than average risk/probability that some event or combination of events will occur which could lead them to experience long term change in SWB. The extroverts have a high 'upside risk' of large gains in life satisfaction; they roll the dice with a positive bias. Neurotic people have a high 'downside risk' of large losses; they roll the dice with a negative bias. People who are both extroverted and neurotic may have a high risk of significant change in either direction (but see below).

Table 1 shows key evidence testing these hypotheses (Headey, 2006b). The sample comprises 2872 West German and immigrant ('guest-worker') respondents who participated in SOEP every year in 1985-2005. The outcome variable is differences in individuals' satisfaction scores in the five-year period 2000-04 compared with 1985-89. Satisfactions scores were averaged over five years precisely to capture long term rather than transitory changes.

Life satisfaction is measured on a single item 0-10 scale where 0 means 'completely dissatisfied' and 10 means 'completely satisfied'. The personality traits are measured on 1-7 scales. The key relationships in the equations reported in Table 1 are of course between personality traits and changes in life satisfaction.[6] However, note that gender, age and its quadratic term, and life satisfaction in 1985-89 are also included, essentially as 'controls'. The reason for including the lagged measure of life satisfaction is that, as SWB researchers are well aware, there is invariably a large negative correlation between life satisfaction at baseline and changes between baseline and some later date. This type of 'regression-to-the-mean' is dealt with by including the baseline measure on the right side of equations, and much improves their statistical fit.

Table 1 reports OLS regressions for the total sample, then for men and women separately, and then for prime age adults (30-64) whose SWB, according to set-point theory, is least likely to change.

[6] Note that in SOEP personality traits E, N and O were not measured until 2005. Assuming that adult personality is pretty stable, the date of measurement should not affect results. This particularly applies to results for prime age individuals shown in the final column of Table 1.

Table 1

Long Term Change in Life Satisfaction: Upside and Downside Risks: OLS regressions (metric coefficients)

	Outcome variable: change in life satisfaction $LS_{2000-04} - LS_{1985-89}$			
	All	**Men**	**Women**	**Age 30-64**
E	**0.14*** **	**0.12*** **	**0.16*** **	**0.12*** **
N	**-0.24*** **	**-0.25*** **	**-0.23*** **	**-0.24*** **
Female	0.03	-	-	0.10
Age	0.01	0.00	0.02	0.02
Age^2	-0.00	0.00	-0.00	-0.00
$LS_{1985-89}$	-0.55***	-0.55***	-0.54***	-0.55***
R^2	28.5%	27.8%	29.0%	27.8%
Sample	2872	1364	1508	1002

Source: SOEP 1985-2005. Sample: balanced panel of respondents aged 16 and over.

***significant at 0.001

In interpreting the evidence in this table, recall that 6% of the sample recorded gains in life satisfaction of 2 or more points (close to 1.5 standard deviations) and that 13% recorded declines of the same magnitude. The evidence clearly indicates that the more extroverted the individual, the larger was his/her gain in life satisfaction in the twenty year period 1985-2004. The more neurotic the individual, the larger was his/her decline in satisfaction. It might perhaps be inferred that those who were both relatively extroverted *and* relatively neurotic were at exceptionally high risk of change, but in what direction is not immediately clear (but see Table 2 below).

Note, however, that the modest coefficients for E and N in Table 1 could be said to be compatible with a watered-down version of set-point theory, which could be revised to say that *most* people's set-points do not change, and are not liable to do so if they score near the mean on both E and N.

Can the analysis be extended to include the Openness (O) trait?

Personality trait O is usually found to be uncorrelated with SWB[7] but is associated with experiencing both more favourable life events and more adverse events (Headey and Wearing, 1989; Magnus et al, 1993). So high O scorers also 'roll the dice' more often than average. A minority of them might be expected (like a minority of high E and high N scorers) to record substantial changes in SWB over a 20 year period. However, since O is itself uncorrelated with SWB, logic would suggest that it can only affect outcomes in combination with E or with N. People who score high on both E and O may be hypothesised to have an especially high upside risk of gains in SWB, while those score high on N and O may have an unusually high downside risk of declines in SWB.

How to translate these ideas into appropriate equations? The usual approach is to construct interaction terms. The term E*O may capture the combined effect of extroversion and openness, and the term N*O may capture the combination of neuroticism and openness. But it is notorious, at least when dealing with survey data, that equations which include both main effects (E, N) and interaction terms (E*O, N*O) often yield counter-intuitive results (e.g. coefficients with the 'wrong' signs), and results which are unstable in that they do not stand up to minor variations in specification. Further, they rarely replicate in new data sets. In part, as is well known, this may be due to high levels of collinearity between main effects and interaction terms.

The analyses attempted here plainly suffered from these types of problems. When equations were run which included both main effects and interaction terms, the signs of the interaction terms were, in several cases, contrary to hypothesis. The results made no sense in terms of any plausible theory. However, when main effects were

[7] In the SOEP file there was a small positive correlation between O and life satisfaction in 2005. This should probably be regarded as an aberrant result. Also, there was a moderate correlation between E and O, which in principle should be orthogonal.

omitted, and *only* interaction terms included, more plausible results were found (Table 2).

Table 2

Upside and Downside Risk of Long Term Change in Life Satisfaction: OLS equations with interaction terms

	Outcome variable: change in life satisfaction $LS_{2000-04} - LS_{1985-89}$		
	Eq 2.1	Eq 2.2	Eq 2.3
E	**0.20*** **	**-**	**-**
N	**-0.42*** **	**-**	**-**
E*O	**-0.16** **	**0.24*** **	**0.25*** **
N*O	**0.30*** **	**-0.27*** **	**-0.20*** **
E*N	**-**	**-**	**-0.10** **
Female	0.04	-0.01	0.01
Age	0.01	0.01	0.01
Age^2	-0.00	-0.00	-0.00
$LS_{1985-89}$	-0.54***	-0.53***	-0.54***
R^2	29.0%	26.8%	27.1%

Source: SOEP 1985-2005. Sample: balanced panel of respondents aged 16 and over. Sample size=2843. The interaction terms have been constructed to run from 1 to 7, as do the scales for E, N and O.

***significant at 0.001 **significant at 0.01

Equation 2.1 (first column of results) just exposes the problems which arise when interaction terms are included. The sign for E*O was expected to be positive but turned out negative, while N*O should have been negative but turned out positive. These results, which surely have to be rejected as aberrant, are almost certainly due to multicollinearity; the correlation between E and E*O is 0.82, and the correlation between N and N*O is 0.66.

Equations 2.2 and 2.3 yield apparently more sensible and interpretable results. Here the main effects of E and N have been omitted, and personality traits are included only as interaction terms. It could be argued that, although this is contrary to standard practice, it does directly test the hypotheses that are being put forward. Recall that the hypotheses propose that (1) individuals with a high probability of gains in SWB are those who score high on both E and O, and (2) those at great risk of decline in SWB are high scorers on both N and O. Equation 2.2 perhaps offers a little support for these two conjectures, but it should be noted that the overall fit of the equation (adjusted R^2=0.268) is a bit worse than the Table 1 equation which included only main effects (adjusted R^2=0.285).

Equation 2.3 in Table 2 is even more speculative. It adds another interaction term, namely E*N. Individuals who score high on both E and N are notorious types; they tend to be heavy smokers, heavy drinkers, and disproportionately criminals (Eysenck and Eysenck, 1969). They are certainly risk-takers, and perhaps we might expect their SWB to be more likely to decline rather than increase over time. The small but significantly negative coefficient for E*N could be taken to suggest that this is what happens. Again, however, it has to be conceded that the fit of this equation (adjusted R^2=0.271) is worse than for the Table 1 main effects equation.

Alternative specifications were tried, using dummy variables for sub-groups of E*O and N*O, but again results were unconvincing. Some were plausible, some were counter-intuitive, and they were unstable in the face of minor variations in variable construction and equation specification.

Overall, it certainly cannot at this stage be claimed that the SOEP panel results indicate that O is implicated in changes in life satisfaction. This is perhaps somewhat surprising, given the evidence that O increases exposure to major life events. It may be that subsequent research will implicate O, but for the moment the inquiry has led nowhere.

The asymmetry of change: why do more people show large declines in SWB than show large gains?

It has been mentioned that more than twice as many respondents in the SOEP panel recorded large declines in life satisfaction as recorded large gains. This asymmetry of change is a finding of potential interest. The asymmetry occurred in the context of only a very small decline in average satisfaction for the total sample in this long period – from 7.2 on the 0-10 scale in 1985-89 to 7.0 in 2000-04. In other words, the relatively large numbers who became substantially less satisfied were more or less counterbalanced in the total population by somewhat larger numbers who became slightly more satisfied, leaving the national mean little changed.

It is certainly possible that the asymmetry will not replicate in other panels. It could even be due to sample bias – respondents who have remained in SOEP for two decades are plainly a highly self-selected group – but, in general, survey researchers would tend to expect people who were becoming less happy to drop out of a panel at a greater rate than people who were becoming happier, and not the other way round.

If the asymmetry is 'real' and not just a measurement artifact, and if it replicates in other panels, we will need to ask why it is harder to become substantially more satisfied with life than it is to suffer a serious decline. An explanation offered by Selye (1950) may hold, although in this context it is highly speculative. Selye, the psychologist who first developed stress theory in the 1930s, showed that all major life events, even putatively favourable ones (e.g. getting married; getting promoted at work) are stressful and increase the risk of mental and physical health problems. So Selye would perhaps not be surprised by the life satisfaction results reported here. He might say that favourable events and experiences may result in some gain in

happiness, but at the cost of some stress, whereas adverse events (e.g. the death of a family member; being sacked) are unambiguously stressful.[8]

[8] It is also likely that the longer the panel runs, the more respondents are in the last two or three years of life, at which stage life satisfaction declines ('terminal decline'). Thanks to Gert G. Wagner for drawing attention to this point.

Choice of life goals/priorities matters to life satisfaction

Another new finding, which if correct punches a larger hole in set-point theory, is that choice of life goals appears to matter to happiness/life satisfaction (Headey, 2007, in press). Clearly, it is quite contrary to the whole thrust of set-point theory to think that a person can improve his/her SWB by sensible choice of life goals.

Think back to Easterlin's (2005) review of the literature on the family life and health. One inference he drew was that people would be happier if they prioritised these domains and not the economic domain. In thinking how to test Easterlin's idea, it seemed sensible to reformulate it in order to try and make it more general and more explanatory. Why might it be better for happiness to focus on some domains rather than others? Perhaps the key distinction lies between *zero sum and non-zero sum domains of life.* Zero sum domains are competitive – one person's gain is unavoidably another person's loss – whereas non-zero sum or positive sum domains are those in which 'my gain can also promote your gain'. The economic domain, and domains where status is involved, are by and large zero sum. Family life, health and many community and volunteer activities are, by contrast, more or less non zero sum or positive sum domains.

The German SOEP panel also provides data which enable us to provide a limited test of these ideas. SOEP has used a classification of life goals initially developed by Kluckhohn and Strodtbeck (1961). The instrument set out to measure three sets of goals:

- *success:* career success and material gains
- *family life*: happy marriage, children
- *altruism*: friendship, helping others, social and political activism.

Clearly success goals may be viewed as predominantly zero sum, whereas family goals and altruistic goals are predominantly non-zero sum or positive sum.

Table 3 shows how choice of life goals relates to life satisfaction (Headey, 2006c). In doing the analysis, variables which might reasonably be thought of as antecedent to or coterminous with life goals were 'controlled'. These included gender, age and its quadratic, personality traits, marital status, education, income and health.

Table 3

Impact of Life Goals on Life Satisfaction 2004: OLS regressions (metric coefficients)

Explanatory variables 2004	**Outcome variable: Life Satisfaction 2004 (0-10)**	
Success goals	**-0.08***	**-0.09***
Family goals	**0.32*****	**0.26*****
Altruistic goals	**0.18*****	**0.16*****
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/1000		0.02***
Health disability (1-0)		-0.60***
Sample size	8271	8026
Adj. R squared	13.1%	15.8%

*** significant at 0.001 *significant at 0.05

The evidence indicates that success goals – zero sum goals – are slightly negatively related to life satisfaction (net of all other variables in the equation), while non zero sum goals are significantly and quite strongly positively related. Further analysis (not shown here) indicated that respondents who had persistently over fifteen years pursued (or reported pursuing) non zero-sum goals recorded gains in life satisfaction, whereas those who persistently pursued zero sum goals recorded declines (Headey, 2006c, 2007 in press).

Where are we now? Possible new lines of theory

What would a worthwhile new theory of SWB look like? Arguably, it would at minimum have to give a sensible account of linkages among four sets of variables: person characteristics (including personality traits), life goals/priorities, life events, and measures of well-being and ill-being. In the recent past, SWB researchers have tended to specialise in the study of *well-being*, but this is one-eyed. *Well-being* (life satisfaction, positive affects) and *ill-being* (anxiety, depression and stress) need including in the same explanatory framework. That is, we need to understand the partly overlapping and partly different correlates and causes of well-being and ill-being, rather than putting them in separate research baskets.

Otherwise a revised theory of SWB needs to satisfy the Lakatos (1970) criterion; that is, it should account in a reasonably parsimonious way for all the data satisfactorily accounted for by previous theory – set-point theory – plus the new discordant results which set-point theory fails to account for.

There are several promising lines of theory which may be worth further development. Investigations based on the supposition that choice of life goals matters to SWB appear to offer one such line. It may be that, if a person can select life goals/priorities suited to his/her particular personality and skills, then improved SWB becomes a reasonably strong possibility. A capacity for persistence/perserverance in pursuit of goals may also make a substantial difference. This possibility is mentioned partly on the basis of finding that high 'internal locus of control', in addition to pursuit of non zero-sum goals, is linked to higher levels of SWB (see Table 3 above).

It should be noted that the idea that choice of goals is linked to SWB is a central plank of the 'authentic happiness' school of thought (Seligman, 2002). The idea that internal locus of control is a key trait linked to success in the pursuit of goals harks back to Rotter's (1966) work in this area, and also to more recent work suggesting that 'personal control' may be important for SWB (Peterson, 1999).

Two other more general trends in research in individual psychology may blend in with new work on SWB. There is now a considerable body of research which shows that quite large scale interventions (as distinct from one-on-one therapy) can be effective in enhancing overall SWB or specific aspects of well-being. Evaluations of group training in marriage improvement and in parent effectiveness have yielded very positive results (Gottman, 1996; Sanders, 1996; for similar claims relating to SWB, see Fordyce, 1988).

A second contribution from the broader field of personality psychology, which may be ripe for incorporation into SWB theory, relates to changes in personality during adulthood. There is some evidence that personality traits, rather than being immutable from adolescence onwards, can change quite a lot in young adulthood – before age 30 – and that changes after that age are not extremely rare (Roberts, Walton and Viechtbauer, 2006). One view ('social investment theory') is that committed investments in specific social roles (e.g. husband, wife, manager) may have a permanent effect in modifying personality traits (Roberts, Walton and Viechtbauer, 2006). A recent paper by Scollon and Diener (2006) has indicated that changes in personality during adulthood can be linked to changes in SWB. It may even be the case that there are positive feedback loops between gains in SWB and what might be termed 'positive' changes in personality (e.g. increased E and lower N).

To conclude: this should be an exciting time in SWB research. The whole field may be opening up again. Set-point theory was of limited scope and stultifying in its implications. So we should probably stop strapping what Kuhn (1962) called 'protective belts' on to the old theory and instead see if we can manufacture our own small 'scientific revolution'.

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