



Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being

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Abstract

There is increasing interest in the “economics of happiness”, reflected by the number of articles that are appearing in mainstream economics journals that consider subjective well-being (SWB) and its determinants. This paper provides a detailed review of this literature. It focuses on papers that have been published in economics journals since 1990, as well as some key reviews in psychology and important unpublished working papers. The evidence suggests that poor health, separation, unemployment and lack of social contact are all strongly negatively associated with SWB. However, the review highlights a range of problems in drawing firm conclusions about the causes of SWB; these include some contradictory evidence, concerns over the impact on the findings of potentially unobserved variables and the lack of certainty on the direction of causality. We should be able to address some of these problems as more panel data become available.

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1. Introduction

For the last one hundred years, neoclassical economists have inferred the utility that an individual derives from goods and services from the decisions that she makes – the preferences that she reveals – in her market behaviour. This is based on the premise that individual utility or well-being is the extent to which the individual's preferences are satisfied. If it is assumed that individuals are rational, fully informed and seek to maximise utility, then the choices they make are those that, by definition, maximise expected utility.

However, economists and psychologists have become increasingly concerned that preferences are often not a very good guide of the well-being associated with the consequences of choices, and are turning to alternative ways of thinking about and measuring utility. Self-reported measures of utility are more familiar within psychology. Subjective well-being (SWB) is often used by psychologists as an umbrella term for how we think and feel about our lives (see Diener, Suh, Lucas, & Smith, 1999). Despite earlier concerns, these appear to be relatively robust indicators of a person's SWB (Dolan & White, 2007). Rather than the 'decision utility' approach of revealed preferences (as reflected in market behaviour) or stated preference studies (e.g. using the contingent valuation method), SWB takes an individual's well-being to be their overall assessment of their life (Sumner, 1996).

Through the analysis of large datasets, economists and psychologists have gained important insights into the determinants of SWB, such as the effect of income and relative income (Clark & Lelkes, 2005) and the possible effects of the trade-offs between inflation and unemployment (Di Tella, MacCulloch, & Oswald, 2001). Studies on the determinants of well-being adopt the general form:

$$\text{SWB}_{\text{report}} = r(h)$$

where the self-reported SWB, often a response to a single life satisfaction or overall happiness question, is some reporting function (r) of true SWB (h), and true SWB is determined by a range of social, economic and environmental factors (X 's). This is usually modelled empirically as an additive function:

$$\text{SWB}_{\text{it}} = \alpha + \beta_1 X_{1\text{it}} + \beta_2 X_{2\text{it}} + \dots + \varepsilon_{\text{it}}$$

where individual differences in reporting are captured within the error term.

How SWB responses are treated differs across studies: some empirical work treats SWB responses as cardinal whilst others respect the strict ordinality of the data and treat true SWB as a latent variable (analysed by ordered logit or probit). However they are estimated, interpreting the coefficients from empirical work relies upon the assumptions within the model; critically, that causality runs from explanatory to dependent variable, and that no unobserved variables are correlated with the included explanatory variables.

This paper reviews the evidence relating to how a range of personal, economic and social factors are associated with SWB. We make no substantive claims about the superiority of SWB over preferences as a representation of individual utility but rather seek to provide fresh insights into the determinants of SWB so that others can more fully consider their relevance to policy, etc. We focus our review on analyses of large datasets and, as such, we do not consider the results from studies conducted by Kahneman, Krueger, Schkade, Schwarz, and Stone (2004), for example, which measure well-being as the aggregation of mood over the course of day. The measures of SWB we review here are 'experienced' in the sense that individuals assess how well life is going but these assessments do not have to

be duration-weighted aggregations of well-being over time in the way that Kahneman's conception of 'experienced utility' does (Kahneman, Wakker, & Sarin, 1997).

A significant review of the economic literature was conducted by Frey and Stutzer (2002) but, since then, the number of studies exploring SWB has burgeoned. In particular, there are now many more papers using panel data, which allow us to shed more light on the vexing issue of causality than was possible five years ago and control for time-invariant individual effects, such as personality. Our aim is to provide economists, psychologists and other researchers interested in SWB the opportunity to learn more about the state-of-the-art research being carried out in the economics literature, including the measures and analytical techniques used as well as emerging results. The degree to which such evidence is robust and provides any suggestions about causality is given particular emphasis.

In Section 2, we present the review strategy and in Section 3, we present the results of the review. In Section 4, we consider some implications of the findings. One firm conclusion that can be drawn is that the existing evidence base is not quite as strong as some people may have suggested and there are some important avenues for future research that could be explored with the existing panel datasets. This, in addition to the lack of clear evidence on causality, makes it difficult to make clear policy recommendations at this stage. Nevertheless, our findings suggest researchers – and perhaps policy makers too – should be aware of the impact of income, relative income, health, personal and community relationships and employment status in their analyses.

2. Review strategy

Although a number of reviews of the correlates of SWB have been conducted on the psychological literature (e.g. Diener & Seligman, 2004), these tend to rely on a great many small scale studies, where the list of factors associated with SWB reflect the interest of psychologists (e.g. personality), where generalisability is questionable and where the possibility for isolating the impact of one factor upon SWB through controlling for other factors is limited. Therefore, our focus is on research conducted on large datasets where more factors can be considered and controlled for. There were four strands to the search strategy. The first was to identify all original papers that explored the determinants of SWB published in economics journals since 1990 (there were very few rigorous analyses before this date) and up to January 2006 via 'Econlit' using the search terms: 'subjective well-being', 'happiness' and 'life satisfaction'. Whilst satisfaction with certain aspects of well-being (job satisfaction, relationship satisfaction, health satisfaction), are important to understanding well-being, they are not a full measure of individual well-being, and are therefore not the focus of this work. Papers that did not contain original data analysis or focused on an outcome measure which was only part of subjective well-being were excluded.

Although our primary focus was on the economics literature, we were aware that several recent papers in psychology used the same large-scale datasets as economists and similar analytical techniques. To investigate these cross-disciplinary overlaps, the second strand of the literature search was to locate this collection of papers (identified via 'Psychinfo') using the same search terms as above with the names of the datasets identified via the search on economics journals. Third, for comprehensiveness, we identify all reviews of the psychology literature on the causes and correlates of well-being published since 2000 (later reviews build on earlier ones so the most recent evidence is most relevant here). Finally, we identified significant grey literature, which contains original data analysis,

from the key economists working on SWB. This search strategy identified a total of 153 papers.

Together, this review strategy revealed 19 major national and cross-national data sets that included measures of SWB. Many of these used only a single, or sometimes two, single item measures. A full list of these questions and response formats by survey can be seen in Appendix A. A typical example is from the British Household Panel Survey (BHPS), “How satisfied are you with your life overall” (1 “Not satisfied at all” to 7 “Completely satisfied”). In addition to these single item measures, some surveys, for instance the BHPS and the Midlife in the US (MIDUS) survey have included SWB scales composed of more than one item. These have included the Positive and Negative Affective Scale (PANAS, Watson, Clark, & Tellegen, 1988), the Satisfaction with Life Scale (SWLS, Diener, Emmons, Larson, & Griffin, 1985), and the General Health Questionnaire (GHQ, Goldberg & Williams, 1988) often in a short form (e.g. GHQ12) which also contains several items measuring SWB.

The papers were reviewed according to a template where consideration is given to the dataset and sample used, the specific measure of well-being used, the statistical and econometric analysis conducted, and the findings relating to the correlates with, and causes of, well-being. We give less weight to correlation studies that do not control for other variables and give greatest weight to the limited but increasing number of studies that control for unobserved individual effects (this is usually done by fixed effects models using panel data which allow us to control for unobserved individual-specific effects which may be correlated with other explanatory variables). Further details of the review strategy, and summaries for all the studies, are available from the authors upon request.

3. Review results

We have considered all the potential influences on well-being that have been identified in the literature. These fall under seven broad headings: (1) income; (2) personal characteristics; (3) socially developed characteristics; (4) how we spend our time; (5) attitudes and beliefs towards self/others/life; (6) relationships; and (7) the wider economic, social and political environment. Of course, many of the characteristics may interact with one another and so we highlight any important interaction effects where the evidence is available. In some cases (e.g. in relation to age and gender), we present results that can be found in the papers we review but which do not form the focus of the authors’ own analyses.

3.1. *Income*

This is a very complex area where much research has been undertaken. Clark, Frijters, and Shields (2007) provide a comprehensive review of the relationship between income and SWB, and so we provide only a brief overview here. The results generally suggest positive but diminishing returns to income. Some of this positive association is likely to be due to reverse causation, as indicated by studies which show higher well-being leading to higher future incomes (Diener, Lucas, Oishi, & Suh, 2002; Graham, Eggers, & Sukhtankar, 2004; Marks & Flemming, 1999; Schyns, 2001), and some is likely to be due to unobserved individual characteristics, such as personality factors, as indicated by studies which find a

reduced income effect after controlling for individual effects (Ferrer-i-Carbonell & Frijters, 2004; Luttmer, 2005).

Studies that have included relative income (defined in a range of different ways with a range of different reference groups) suggest well-being is strongly affected by relativities (Dorn, Fischer, Kirchgassner, & Sousa-Poza, 2007; Ferrer-i-Carbonell, 2005; Luttmer, 2005; Weinzierl, 2005). This suggests that additional income may not increase well-being if those in the relevant comparison group also gain a similar increase in income. However, increases in income that result in increases in tax yield, which could be used to fund public services that may themselves enhance well-being. For a given income level, having high aspirations and expectations have a negative effect on SWB (Macdonald & Douthitt, 1992; Stutzer, 2004). Aspirations themselves appear to be driven in part by past incomes, implying adaptation to higher levels of income (Stutzer, 2004; Di Tella, Haisken-De New, & MacCulloch, 2005). The importance of aspirations reinforces findings that the perceptions of financial status have stronger predictive power than actual income (Haller & Hadler, 2006; Johnson & Krueger, 2006; Wildman & Jones, 2002). These findings imply that additional income for those who are not at low levels of income is unlikely to increase SWB in the long run if the additional income serves to increase expectations of necessary income.

As noted by Easterlin (1995), if the relative income effect dominates the absolute income effect, this would explain why cross section data show that wealthier individuals within a society are happier, but that average SWB levels remain constant as all members become wealthier. However, positive correlations between average SWB and national income found in international cross section data, particularly in lower income country samples (Di Tella, MacCulloch, & Oswald, 2003; Fahey & Smyth, 2004; Helliwell, 2003; Rehdanz & Maddison, 2005), requires either that comparisons of relative position are made across nations, or that an absolute income effect operates in many countries. Evidence on international relative income effects is limited. Fahey and Smyth (2004) argue that the significance of GDP quartile when holding income constant suggests that relatives between countries matters. Graham and Felton (2006) analyse Latin American responses in which people are asked to place themselves on a ladder where one stands for the poorest level of society and ten the richest and found that average country wealth increases responses suggesting individuals compare themselves to a society external to their own country and “people in part judge themselves by their place in the international sphere”.

3.2. Personal characteristics (who we are, our genetic makeup)

3.2.1. Age

Studies consistently find a negative relationship between age and SWB and a positive relationship between *age squared* and SWB (e.g. Blanchflower & Oswald, 2004a; Ferrer-i-Carbonell, & Gowdy, 2007). Studies suggest a U-shaped curve with higher levels of well-being at the younger and older age points and the lowest life satisfaction occurring in middle age, between about 32 and 50 years, depending on the study. Easterlin (2006) notes that this U-shaped relationship found when many age-related differences in life circumstances (income, health, employment, etc.) have been controlled for may be misleading since it says little about how the SWB of young and old compare to those at middle age.

3.2.2. Gender

Women tend to report higher happiness (Alesina, Di Tella, & MacCulloch, 2004) but worst scores on the GHQ (Clark & Oswald, 1994), although a few studies report no gender differences (e.g. Louis & Zhao, 2002) even using the same datasets. This suggests that other correlates may also be more important than gender per se given that different studies have different control variables. Indeed, when specific subsets are examined, such as those who cannot work due to health problems (Oswald & Powdthavee, 2006) or those who provide informal care for others (van den Berg & Ferrer-i-Carbonell, forthcoming), the gender effect often disappears.

3.2.3. Ethnicity

In the US, whites have higher SWB than African Americans (Thoits & Hewitt, 2001). There is also some suggestion that ethnicity may interact with age (or cohort, which is difficult to distinguish), since older respondents tend to show less differences as a function of ethnicity (Baker, Cahalin, Gerst, & Burr, 2005; Greenfield & Marks, 2004). Comparing whites to the category “Other” may not be particularly helpful since it is hard to interpret null effects such as those reported by Theodossiou (1998) using the BHPS. One reason is that some ethnicities, in particular Hispanics (Luttmer, 2005), tend to show higher levels of SWB than whites and thus the outcome of the comparison may depend upon the proportion of different ethnic groups within this “Other” category.

3.2.4. Personality

A considerable amount of psychological research has considered the relationship between personality and SWB (for a review see, DeNeve & Cooper, 1998). However, few studies have examined this relationship using large scale surveys of the kind included in our review. Using the WVS data, Helliwell (2006) found a very moderate relationship between personality and SWB once other factors such as social trust and religious beliefs were controlled for. People higher in self-esteem seem less likely to suffer from depression. In addition, many of the sub-scales of the GHQ, which could also be interpreted as personality variables (e.g. self-worth), correlate positively with life satisfaction using the UK, BHPS data (Ferrer-i-Carbonell & Gowdy, 2007).

3.3. Socially developed characteristics

3.3.1. Education

Some studies find a positive relationship between each additional level of education and SWB (e.g. Blanchflower & Oswald, 2004b), while others find that middle level education is related to the highest life satisfaction (e.g. Stutzer, 2004). However, there is some evidence that education has more of a positive impact on low income countries (Fahey & Smyth, 2004; Ferrer-i-Carbonell, 2005). Flouri (2004) finds no significant relationship with the GHQ in the BHPS, and some studies find that education is associated with worse GHQ scores (e.g. Clark, 2003a).

Education qualifications may be related to unobservable traits at the individual level, such as motivation, intelligence or family background and so ideally we should look to those studies which control for unobserved heterogeneity. However, fixed effects models can only pick up the effect of individuals completing their education or returning to

education at a later date and most adult survey respondents are unlikely to change their education level during their time in a panel survey, and consequently fixed effects models are unlikely to find any significant effect for education (e.g. Meier & Stutzer, 2006).

In addition, the coefficient on education is often responsive to the inclusion of other variables within the model. Education is likely to be positively correlated with income and health, and if these are not controlled for we would expect the education coefficient to be more strongly positive. For example, the positive effect of education on overall happiness found by Blanchflower and Oswald (2004a) could be picking up a health effect since this is not controlled for. However, the inclusion of variables correlated with education as controls raises a further problem – if the correlation is due in part to a causal path from education to, say higher income, then fully controlling for income will underestimate the full contribution which education is making to well-being.

To the extent that education has caused greater income and health, we would ideally wish to include this fact in the effect of education. The indirect effect of education on SWB via health is explored by Bukenya, Gebremedhin, and Schaeffer (2003) on US data and Gerdtham and Johannesson (2001) on Swedish data. They both find that the positive coefficient on high school and attending college increases by about one third from the standard model, which suggests that this indirect effect is considerable. Graham and Pettinato (2001) find that years of education increases overall happiness in Latin America, but that the effect becomes non-significant once social mobility and relative economic standing is included, which indicates that the benefits to education may be positional rather than absolute.

3.3.2. Health

Studies consistently show a strong relationship between SWB and both physical and psychological health. Psychological health appears to be more highly correlated with SWB than physical health but this is not surprising given the close correspondence between psychological health and SWB. Some of the association may be caused by the impact that well-being has on health but the effect sizes of the health variables are substantial suggesting that even accounting for the impact of SWB on health, health is still impacting on SWB. Furthermore, specific conditions, such as heart attacks and strokes reduce well-being (Shields & Wheatley Price, 2005), and the causality here is most likely to be from the health condition to SWB. Of course, a third factor (such as personality) may be related to both SWB and health, and this would make finding a significant relationship between health and SWB more likely. Studies using fixed effects models continue to show a strong effect of health on SWB but they are still unable to control for time variant unobservable variables, such as current mood, and using self-rated health as the health variable may serve to exacerbate this problem.

Oswald and Powdthavee (2006) present some evidence that individuals adapt somewhat to disability status, finding that the length of time an individual has experienced the disability reduces the negative impact of the disability. However, adaptation is far from complete. The fixed effects model finds that disability reduces life satisfaction (on a 1–7 scale) by 0.596 points for those with no past disability, by 0.521 points after 1 year of disability, 0.447 points after 2 years and 0.372 after 3 years. An interpretation of adaptation requires that the scale is being consistently used throughout the time period, and is independent of health status.

3.3.3. Type of work

There is insufficient evidence to draw clear conclusions about the impact of type of work on well-being. Given the amount of time people spend at work, this is an area that requires more investigation. Some evidence from the UK suggests that casual work is detrimental to SWB (Bardasi & Francesconi, 2004), and that belonging to a union is beneficial to life satisfaction (Blanchflower & Oswald, 1998). There is a little more evidence on self-employment. Many European studies fail to find any significant difference between being employed and being self employed but Blanchflower and Oswald (1998) find a robust positive effect of self-employment using UK, International (ISSP) and US (GSS) data. Using US and European data, Alesina et al. (2004) find that the positive effect of self-employment is limited to the rich.

3.3.4. Unemployment

Studies consistently show a large negative effect of individual unemployment on SWB. Models which treat life satisfaction scales as a continuous variable, tend to find that the unemployed have around 5–15% lower scores than the employed (e.g. Di Tella et al., 2001; Frey & Stutzer, 2000, 2002; Helliwell, 2003; Stutzer, 2004). Using European data, Lelkes (2006) found that unemployment reduces the probability of a high life satisfaction score (at least 8/10) by 19%, and a high overall happiness score by 15%. Data for Switzerland suggest this reduction may be even higher (Frey & Stutzer, 2000, 2002). Studies which use a reduced form model, instrumenting for health, suggest that the full effect size may be an underestimate when health status is controlled for (Bukonya et al., 2003; Gerdtham & Johannesson, 2001). Whilst there are some exceptions to the finding of strong negative effect of unemployment (Graham & Pettinato, 2001; Smith, 2003), these may have arisen due to small numbers of unemployed in their data.

The possibility that unhappy people have selected into unemployment has been raised in the past. Individuals who have low SWB may be more likely to become employed, if for example, they are less productive, have poorer health or are more likely to choose to become unemployed. Lucas, Clark, Georgellis, and Diener (2004) use the GSOEP to show that people who are later unemployed do not start out with low life satisfaction, and when in the reaction phase (a year before, the period of unemployment and a year after) they experience more than half a point lower life satisfaction on a 0–10 scale. This mirrored Winkelmann and Winkelmann (1998) earlier findings and suggests any selection effects are minimal. Furthermore, controlling for psychological distress in earlier periods (Korpi, 1997) and controlling for individual heterogeneity using fixed effects models, again finds a strongly robust impact of unemployment (e.g. Ferrer-i-Carbonell & Gowdy, 2007; Weinzierl, 2005; Winkelmann, 2004). Some studies have found a reduction in effect size once fixed effects are controlled for (Gerlach & Stephan, 1996; Luttmer, 2005; Oswald & Powdthavee, 2006), while others have found that it remains virtually identical (Meier & Stutzer, 2006).

Men have been found to suffer most from unemployment (Clark, 2003a, 2003b; Dockery, 2003; Gerlach & Stephan, 1996; Lucas et al., 2004; Theodossiou, 1998) and some studies also find that the middle aged suffer more than the young or old (Clark & Oswald, 1994; Pichler, 2006; Winkelmann & Winkelmann, 1998). Those with higher education suffer more in Britain (Clark & Oswald, 1994), those with right wing political leanings in the US (Alesina et al., 2004) and those in high income countries (Fahey & Smyth, 2004). In the UK, Shields and Wheatley Price (2005) find that the impact of unemployment on

the GHQ is related to the extent of employment deprivation in the area, with the individual unemployment effect being neutralised in areas with employment deprivation of over 22%. Using the BHPS, Clark (2003a) finds that the negative effect of unemployment would be neutralised at a rate of 24%. The same study also finds that, for those working, having an unemployed partner is detrimental to well-being, but for the unemployed it is beneficial. These findings suggest that the impact may be dependent upon the extent to which the individual can substitute other activities for work, belong to non-work based social networks and are able to legitimise their unemployment.

There is some mixed evidence of adaptation to unemployment. Using the BHPS, Clark and Oswald (1994) find that the negative coefficient on unemployment reduces with the length of unemployment but, using the GSOEP, Winkelmann and Winkelmann (1998) fail to find a duration effect and Lucas et al. (2004) find that individuals who are unemployed for more than a year experience a more negative reaction to unemployment, and previous unemployment experience does not reduce the harm of current unemployment. They also find that once unemployment has ended, individuals do not return to their pre-unemployment levels of life satisfaction. Similarly, Louis and Zhao (2002) find that any period of unemployment over the last 10 years has a negative impact on a combined general happiness scale. The impact of unemployment beyond the current spell alleviates concerns that lower life satisfaction is being driven by social pressure to report lower life satisfaction during unemployment.

Using a fixed effects model, Wildman and Jones (2002) find that the negative unemployment coefficient for men, falls from 1.979 points (on a 0–36 GHQ Likert scale), to 0.989 once satisfaction with finances and expectations of future financial position is controlled for. Studies which have controlled for income and found a negative effect of unemployment have interpreted this as a non-financial loss. However, Wildman and Jones (2002) findings suggest that current income may not be the most suitable measure of financial position, and that some of the damage of unemployment arises due to increased concerns over future finances.

3.4. How we spend our time (the work and activities we engage in)

3.4.1. Hours worked

While the evidence is relatively clear that employment is better than unemployment, the relationship between the amount of work (e.g. number of hours worked) and well-being is less straightforward. Data from the German GSOEP suggests that life satisfaction rises as hours worked increases, controlling for individual fixed effects (Meier & Stutzer, 2006; Weinzierl, 2005). This supports evidence from the UK's NCDS, which suggests that part-time work is associated with lower life satisfaction among men than full-time work (Schoon, Hansson, & Salmela-Aro, 2005). However, other studies report no differences between full-time and part-time work and SWB in the BHPS (Bardasi & Francesconi, 2004) or in the GSS or ISSP (Blanchflower & Oswald, 2004a, 2005).

Luttmer (2005) reports a negative relationship between the log of usual working hours and happiness using the NSFH data. Using the GSOEP, Meier and Stutzer (2006) find an inverse U-shaped curve between life satisfaction and hours worked (including when fixed effects are controlled for) suggesting that well-being rises as hours worked rise but only up to a certain point before it then starts to drop as hours become excessive. Across all the studies, there is little consideration given to the type of work undertaken and this could

also be an important moderating effect. Of course, the impact of work hours is likely to vary depending upon whether the number of hours worked is voluntarily chosen.

3.4.2. *Commuting*

In Germany, [Stutzer and Frey \(2005\)](#) find lower life satisfaction with greater commuting time (using both normal and fixed effect models) and also find that this does not seem to result in greater well-being for other family members. Research to explore the consequences of different types of commuting may help minimise the loss caused by commuting. This research will obviously need to take into consideration a range of other factors (such as living in a particular area) to see the net effect of commuting on well-being.

3.4.3. *Caring for others*

The evidence from the few studies that examined the effects of the amount of time engaged in informal care-giving suggests that more care is associated with worse GHQ scores ([Hirst, 2003, 2005](#)), lower happiness ([Marks, Lambert, & Choi, 2002](#); [van den Berg & Ferrer-i-Carbonell, forthcoming](#)) and more depressive symptoms ([Marks et al., 2002](#)). The effects are especially strong for close kin as opposed to non-kin ([Marks et al., 2002](#)), which may be due to more hours of kin care-giving or because of greater emotional attachment. The transition into and out of care-giving has also been explored. Not surprisingly, transition into care-giving is associated with a range of negative well-being outcomes ([Hirst, 2005](#); [Marks et al., 2002](#)). Using BHPS data, [Hirst \(2005\)](#) found that women's GHQ scores were also negatively affected by the transition out of a high load care-giving role. It is unclear whether this is due to the loss of a defined role or because the person being cared for either had to leave the house to receive more professional care (indicating a worsening of the state), or maybe even passed away but the losses in well-being are such that they might be given greater prominence in debates about informal care in health and social care policy.

Autonomy has been proposed as an essential pre-condition for well-being ([Ryan & Deci, 2001](#)) and the losses associated with caring may arise from a loss of autonomy and choice a full-time caring role imposes. However, as noted by [Brown, Nesse, Vinokur, and Smith \(2003\)](#), if the negative impact of personal circumstances were adequately accounted for, then the act of giving help to others may have potentially beneficial impacts.

3.4.4. *Community involvement and volunteering*

A positive relationship has been found in some studies between SWB and membership in (non-church) organisations. [Pichler's \(2006\)](#) analysis of the ESS found that membership of more organisations increases life satisfaction. [Helliwell \(2003\)](#) found that both individual involvement in non-church organisation and national average membership of non-church organisations are significantly positively related to life satisfaction in his analysis of 49 countries from the WVS. [Helliwell and Putnam \(2004\)](#) confirm these positive relationships with life satisfaction found in the WVS, noting also that national average membership significantly increases overall happiness but that individual membership does not. In the US Benchmark data, they find a significant positive relationship between individual membership and overall happiness, but a non-significant (and negative) relationship between national average membership and overall happiness. However, contrasting results are found by [Li, Pickles, and Savage \(2005\)](#) who find that civic participation has a negative but non-significant relationship on life satisfaction in the BHPS and [Bjørnskov \(2003\)](#) who

finds that when trust and social norms are controlled for associational activity in the WVS has a strong negative significant effect on life satisfaction. However, Bjørnskov finds this effect disappears when regional dummies are left out of the equation.

In terms of volunteering, Haller and Hadler (2006) found no relationship between volunteering and happiness or life satisfaction (across 34 countries using the WVS data). However, Greenfield and Marks (2004) found that among a sub-set of older people, volunteering was associated with more positive affect, more meaning in life, but not less negative affect. Furthermore, although Thoits and Hewitt (2001) did find a positive relationship, it also seemed to be the case that happier people tended to do more voluntary work, questioning the argument that volunteering is the cause of greater well-being.

Meier and Stutzer (2006) take advantage of data from Eastern Germany (GSOEP) where institutional breakdown following the collapse of the German Democratic Republic resulted in a dramatic reduction in volunteering – frequent volunteering falling from 17% to 9% between 1990 and 1992. They find that more regular volunteering (less than monthly, monthly and weekly) increases life satisfaction, monotonically. However, although income, employment and personal characteristics were controlled for, trust was not. The impact of volunteering reduces considerably when fixed effects are controlled for, and only volunteering weekly remains significant, suggesting part of the higher well-being levels arise from individual heterogeneity (Meier & Stutzer, 2006). Therefore, while some observers have claimed that greater community involvement is a win-win situation, providing better outcomes for the community at large and making those involved feel better about themselves, the evidence we review here suggests more caution is needed.

3.4.5. Exercise

There is evidence that even simple types of exercise such as gardening (Ferrer-i-Carbonell & Gowdy, 2007) may be associated with higher life satisfaction and that this may be especially important for the over 60s (Baker et al., 2005). The amount of time engaged in physical activity among the over 60s was also negatively associated with depressive symptoms (Baker et al., 2005). Although a review of the broader literature on exercise and well-being has recently appeared (Biddle & Ekkekakis, 2005), little use has been made of large datasets and thus there seems to be an important gap in research here. Given that exercise may not only help to reduce a number of negative outcomes (e.g. weight gain and depressive symptoms), but also promote a range of positive ones (e.g. higher levels of happiness and life satisfaction) it would seem to have high policy potential.

3.4.6. Religious activities

The evidence is fairly consistent and suggests that regular engagement in religious activities is positively related to SWB (e.g. Clark & Lelkes, 2005; Hayo, 2004). While some studies only examine whether or not the person actually attends church, others examine different amounts of time spent in these activities. Using WVS data, Helliwell (2003) finds higher life satisfaction to be associated with church attendance of once or more a week. A similar finding is found in Eastern Europe (Hayo, 2004) though less frequent attendance did not result in higher levels of life satisfaction than no attendance. Contrary to this latter finding, and using ESS data, Clark and Lelkes (2005) report that church attendance of at least once a month is enough to have an effect on life satisfaction. However, since attendance of once a week or more is included within ‘at least once a month’, the significant effect may be due to weekly attendance rather than less frequent attendance. There is some

evidence to suggest that religious attendance reduces the effect of income on happiness, especially for African Americans (Dehejia et al., 2005).

3.5. Attitudes and beliefs towards self/others/life

3.5.1. Attitudes towards our circumstances

The evidence suggests that perceptions of our circumstances can be very important predictors of life satisfaction. One domain that has been relatively extensively researched is financial satisfaction. As might be expected, poorer perceptions of one's current financial situation are usually associated with lower life satisfaction (e.g. Graham & Pettinato, 2001; Hayo & Seifert, 2003; Louis & Zhao, 2002). There is also evidence suggesting that perceptions of change in financial circumstances, as opposed to current circumstances, may also be important for well-being. Using the BHPS and controlling for current income, Brown, Taylor, and Wheatley Price (2005) find lower GHQ scores when people perceived their current financial situation to be worse than last year and when next year's situation is predicted to be even worse (see also Wildman & Jones, 2002). Similar findings are reported when perceptions of job security are examined (e.g. Dockery, 2003; Graham & Pettinato, 2001). Importantly, perceptions of financial circumstances appear to fully mediate the effects of objective circumstances (Johnson & Krueger, 2006) suggesting they have a more direct influence on global life satisfaction.

3.5.2. Trust

The evidence is relatively clear from the few studies that have looked at trust and the effects are relatively large. Using WVS and ESS data, Helliwell (2003, 2006) and Helliwell and Putnam (2004) has found that social trust (trust in most other people) is associated with higher life satisfaction and happiness, and a lower probability of suicide. For the UK, Li et al. (2005) use a cross-section, ordered logit on BHPS and find neighbourhood social trust increases life satisfaction. Bjørnskov (2007) uses WVS data to show that generalised trust increases life satisfaction, and a social capital factor score (comprised from principal components analysis of responses to generalised trust, civic participation and perceptions of corruption) are robustly positively related to life satisfaction. A change in social capital score of 10% of the distance between the highest and lowest score results in an increase in life satisfaction of 4.5%. An equivalent change would require a halving of inflation or increase in per capita income of about 25%. Moreover, trust in key public institutions such as the police, the legal system and government is also associated with higher life satisfaction (Helliwell & Putnam, 2004; Hudson, 2006), as are beliefs about the wrongness to cheat on one's taxes (Helliwell, 2003).

3.5.3. Political persuasion

Few studies have explored the direct effect of holding a particular political view. One exception is Graham and Pettinato (2001) who find that preferences for democracy and pro-market values are associated with higher life satisfaction in Latin America and Russia. However, it may be that these attitudes are held by people who have benefited more from these systems. Studies have also considered the differential impact of economic and social circumstances depending upon political view, via interaction effects. For example, there is some evidence that being unemployed had worse effects on the happiness of "right wingers" in the US and in Europe inequality was worse for the life satisfaction of "left

wingers” and inflation was worse for the life satisfaction of ‘right wingers’ (Alesina et al., 2004). Such results lend support to the idea that the impact of external circumstances is dependent upon perceptions and attitudes.

3.5.4. Religion

Again, the evidence here supports the idea that our beliefs affect our SWB, with religious people generally being happier than non-religious people, irrespective of their faith. Taking perhaps the broadest approach, Helliwell (2003, 2006) reviews WVS data and finds that belief in a God is associated higher levels of life satisfaction. However, the effects seem to be stronger in the US than in Europe (Helliwell & Putnam, 2004) and are sometimes not found at all (Smith, 2003).

It seems to make relatively little difference which religion one belongs to (Christian, Judaism, Hinduism, Buddhism, etc.). Reviewing data in the World Database of Happiness, Rehdanz and Maddison (2005) found that the average happiness of different countries was not affected by the proportion of the population with different religious beliefs. More specifically, Ferris (2002) found no differences in happiness in the US as a function of whether respondents were Jewish, Catholic or Protestant (see also Cohen, 2002). However, there tend to be wide variances in SWB scores within the same religions suggesting that individual differences are important and it would be unwise to talk simply about all Catholics, all Jews, etc. (Haller & Hadler, 2006). For instance, within religions there are differences in the strength of people’s beliefs, the degree to which they use God to help cope with difficulties and their degree of spirituality, all of which have been found to be associated with different levels of SWB (Cohen, 2002).

Stronger religious beliefs may also “insure” people against a loss of income or employment (UK data, Clark & Lelkes, 2005) since religious people’s well-being (especially Catholics) drops as little as half as non-religious people following these negative shocks. Nevertheless, some negative shocks may be hard to deal with in a religious context. For instance, there is evidence that divorced women in the UK gain little in terms of life satisfaction from greater religiosity (Clark & Lelkes, 2005).

3.6. Relationships

3.6.1. Marriage and intimate relationship

Generally speaking, being alone appears to be worse for SWB than being part of a partnership. Regular sex was also associated with more positive SWB and since the effects were strongest when this was with the same partner, it seems that being in a caring relationship is important for well-being rather than simply being in a string of less close relationships (Blanchflower & Oswald, 2004a). Although there is some variation across studies, it seems that being married is associated with the highest level of SWB and being separated is associated with the lowest level of SWB, lower even than being divorced or widowed (e.g. Helliwell, 2003).

There is evidence that the amount of SWB associated with being an unmarried cohabitor depends on the degree to which the relationship is perceived to be stable (Brown, 2000). As opposed to unstable unmarried partnerships, stable ones are associated with similar levels of SWB as married partnerships. Therefore, the evidence again suggests that objective circumstances do not always have direct effects on well-being and that it is important how these experiences are perceived. A number of studies have considered

gender differences and most find similar effects for men and women (e.g. Frey & Stutzer, 2000).

Using BHPS data, Wildman and Jones (2002) report that while men and women appear to suffer equally following widowhood, divorce and separation, single women may actually have higher well-being than married women. Other longitudinal evidence suggests some selection effects with people who become divorced being less happy even before being married (e.g. Lucas, 2005). These studies also show how well-being tends to drop in the period leading up to divorce or widowhood and takes a number of years to stabilise again, and that it may never reach original baseline levels. However, as with much of the evidence reported here, there are widespread individual differences in the rate and degree of adaptation to the new state. Some people recover fairly quickly, others appear to never fully recover. On a more positive note, finding someone new is often associated with a return to something like original levels of well-being.

There is also evidence that parental divorce negatively effects well-being in adulthood (e.g. Blanchflower & Oswald, 2004a) but this was not found in all studies (Louis & Zhao, 2002). Moreover, subsequent remarriage of a parent who has suffered widowhood seems to be associated with lower levels of later well-being than subsequent remarriage of a parent due to divorce (Biblarz & Gottainer, 2000). In general, then, stable and secure intimate relationships are beneficial for well-being and the dissolution of relationships is damaging.

3.6.2. *Having children*

The evidence with regard to the well-being effects of having children is mixed and differs across measure and country. Haller and Hadler (2006) using WVS find that, controlling for income, and financial satisfaction, children have a non-significant effect on happiness but a positive, and significant effect on life satisfaction. This is consistent with theorizing that children put demands on day-to-day positive emotions (happiness) but nonetheless people consider them an important part of their overall well-being at a more cognitive level. However, if financial satisfaction is controlled for this extracts one of the potential negative consequences of additional children. A positive relationship between children and life satisfaction is more likely to arise when income has been equalised to account for household composition (Lelkes, 2006; Schwarze & Härpfer, 2003).

On closer inspection, it seems that children generally affect well-being more negatively for single parents (e.g. Frey & Stutzer, 2000), divorced mothers (Schoon et al., 2005), when the children are over 3 years (e.g. Shields & Wheatley Price, 2005), if the family has recently moved (e.g. Magdol, 2002), if the family is poor (Alesina et al., 2004 for the US) or if the child is sick and needs more than average care (Marks et al., 2002). In other words, if other circumstances are relatively negative, children seem to be an additional challenge to well-being. The impact of children may also depend upon broader social and cultural factors, the presence of children having a stronger negative effect in UK and the US than in Europe or Russia (Di Tella et al., 2003; Smith, 2003). It should also be noted that most studies have explored the impact of children living in the household. However, there may be a variety of differential impacts of living with ones own children, or step-children, or grandchildren, or having children who have left home.

3.6.3. *Seeing family and friends*

It would appear that, overall, socialising with family and friends is positively associated with SWB (e.g. Lelkes, 2006; Pichler, 2006) and that this positive effect applies into older

age (Ritchey, Ritchey, & Dietz, 2001), and remains even when controlling for levels of life satisfaction in previous periods (Baker et al., 2005). A generally positive relationship between social contact and SWB may have implications for government policies which encourage a geographically mobile labour force thereby weakening networks of family and friends.

One of the few studies that differentiates between contact with family and friends finds a significant positive effect on life satisfaction only for contact with family but not friends, though the effect was small (Martin & Westerhof, 2003). However, despite the generally positive association there may also be a few circumstances where greater contact with others is not indicative of better well-being. Martin and Westerhof (2003), for instance, report that global satisfaction is lower when contact involves care from friends and family and Pichler (2006) suggests potential problems when an adult is still living at home with their parents. Again, cause and effect are unclear here.

3.7. Wider economic, social and political environment (*Where we live*)

3.7.1. Income inequality

The evidence on the impact of income inequality on well-being is mixed. Looking at international data using the World Values Survey, Fahey and Smyth (2004) find that inequality reduces life satisfaction and Hagerty (2000) finds a negative relationship with SWB, whereas Haller and Hadler (2006) find that inequality increases life satisfaction. One explanation for these contrasting findings using international data may be that the inclusion of particular countries can be influential on the results (Bjørnskov, 2003). Specifically, the relatively happy Latin American countries tend to have fairly unequal income distributions, and relatively unhappy former-Communist countries tend to have fairly equal income distributions. Individual data has shown equality to be negatively related to SWB in Latin America (Graham & Felton, 2006) and the US (Hagerty, 2000), although Alesina et al. (2004) find this result to be only significant for the rich. In contrast, Senik (2004) finds inequality to have no significant effect on SWB in Russia.

European data show mixed results. O'Connell (2004) finds a positive relationship using Eurobarometer data, whereas Schwarze and Härpfer (2003) using the GSOEP and Alesina et al. (2004) using Eurobarometer data with more controls and a longer time span, find that inequality reduces life satisfaction, particularly for those with left wing political leanings and the poor. For Britain, Clark (2003b) finds that for full time employed individuals, income inequality in one's reference group (based on gender, region and year) increases life satisfaction, particularly for those under 40, those on below average incomes and those who have experienced a greater increase in income over the last 3 years. The effect of income inequality is likely to vary depending on the how the inequality is interpreted. Clark (2003b) and Alesina et al. (2004) explain findings for the UK and US in terms of income equality communicating messages of opportunity. What will be communicated through income inequality is likely to vary according to perceptions of mobility. Where mobility is perceived to be lower, such as Europe and Germany, inequality is found to have a negative impact.

3.7.2. Unemployment rates

National unemployment rates have been found to reduce SWB in the US (Alesina et al., 2004) and in Europe (Di Tella et al., 2001, 2003; Wolfers, 2003). Di Tella et al. (2001)

suggest this may be due to the fear of personal unemployment which arises from a higher national unemployment rate. However, Alesina et al. (2004) fail to find a significant effect of the unemployment rate using the same European data. If the unemployment rate is positively correlated with income inequality in Europe (Cysne, 2004), then the fact that this is only study using the Eurobarometer data to control for income inequality casts some doubt of the clarity of interpretation of this unemployment rate effect. Therefore, more research is needed to gain greater understanding on the extent of the well-being losses from a higher unemployment rate.

3.7.3. *Inflation*

Investigating the impact of inflation is limited to comparisons across countries over time. Within the same country it would be impossible to isolate an inflation effect from any other time effects. Using aggregate data, Bjørnskov (2003) failed to find a significant effect of inflation on life satisfaction. However, controlling for individual personal characteristics and country and year fixed effects inflation has been found to have a consistent negative effect on SWB in Europe (Alesina et al., 2004; Di Tella et al., 2001, 2003; Wolfers, 2003), in Latin America (Graham & Pettinato, 2001) and in the US (Alesina et al., 2004; Di Tella et al., 2003). The inflation impact is worst for those with right wing political leanings (Alesina et al., 2004). In addition, a volatile inflation rate also reduces life satisfaction (Wolfers, 2003). Many studies have a limited number of macro variables, which opens the possibility that other important variables are not adequately controlled for. For example, inflation may correlate with income inequality or lack of trust.

The relative harm caused by inflation and unemployment has been estimated in some studies however, this varies from 1.6:1 (Di Tella et al., 2001), 2.9:1 (Di Tella et al., 2003) up as high as to 5:1 (Wolfers, 2003). Hence a percentage increase in unemployment is more damaging than a percentage increase in inflation (exactly how much more damaging remains uncertain) and macroeconomic policy might wish to take this into account. Di Tella and MacCulloch (2005) provide interesting evidence on life satisfaction from a sample of people living in the OECD over the period 1975–1992 that is consistent with the hypothesis that left-wing individuals care more about unemployment relative to inflation than right-wingers.

3.7.4. *Welfare system and public insurance*

Evidence on the impact of the welfare state is limited. Veenhoven (2000) finds no correlation between welfare expenditure and average happiness or average life satisfaction. However, Di Tella et al. (2003) analyse individual level European data and find that a higher benefit replacement rate (using the OECD index of (pre-tax) replacement rates i.e. unemployment benefit entitlements divided by an estimate of the expected wage) increases life satisfaction for both the unemployed and the employed. Since the replacement rate does not automatically change in line with the business cycle, it is a preferable measure to use.

3.7.5. *Degree of democracy*

The Swiss federal structure gives variation in political institutions and in direct popular rights between 26 Cantons (which deal with education, welfare, and police for example). Thus, it is particularly useful for studying the effects of political institutions. Frey and Stutzer (2000) find that extended individual participation in the form of initiatives and

referenda, and of decentralised (federal) government structures raises life satisfaction. This is generated not just by the outcomes of democracy but also by the political process itself. However, Dorn et al. (2007), cast some doubt on the robustness of these findings, showing that controlling for language group, the democracy index used by Frey and Stutzer (2000) is only significant in their survey data at 10%, and using a new, more representative survey, the Swiss Household Panel, it is insignificant. Using international data needs to address the high correlation between income and democracy, however, when controlling for income (Inglehart & Klingemann, 2000) and language group (Dorn et al., 2005) a positive link between democracy and life satisfaction is still found.

3.7.6. *Climate and the natural environment*

Current evidence of the impact of pollution and environmental factors on well-being is very limited. Welsch (2002) notes the difficulty of isolating any effect of pollution due to the high negative correlation between income and pollution. However, he does provide evidence that suggests that pollution, as measured by nitrogen dioxide, has a detrimental impact on overall happiness (Welsch, 2002, 2006). Ferrer-i-Carbonell and Gowdy (2007) find that environmental problems where one lives reduce life satisfaction but although income is controlled for in this model, this could still be picking up socio-economic status and household wealth. There is little evidence on the impact of climate on SWB but Rehdanz and Maddison (2005) study gives a reasonable indication that extreme weather is detrimental to SWB. In relation to attitudinal variables, Ferrer-i-Carbonell and Gowdy (2007) find that caring about the ozone layer is negatively associated with SWB whilst caring about species extinction is positively associated with SWB.

3.7.7. *Safety and deprivation of the area*

Controlling for ones own income, the evidence suggests that living in an unsafe or deprived area is detrimental to life satisfaction (Ferrer-i-Carbonell & Gowdy, 2007; Lelkes, 2006; Shields & Wheatley Price, 2005). However, given the correlation between victimisation and socio-economic status (Pease, 2001) conclusions on the SWB loss of victimisation and fear of crime needs to be derived from studies which control fully for socio-economic status, which, as this review has suggested, includes considering current income but also perceptions of current and future financial status.

3.7.8. *Urbanisation*

There is some evidence across a range of geographical locations that living in large cities is detrimental to life satisfaction and living in rural areas is beneficial (e.g. Hudson (2006) for Europe; Dockery (2003) for Australia; Gerdtham and Johannesson (2001) for Sweden; Graham and Felton (2006) for Latin America; Hayo (2004) for Eastern Europe). However, some results are non-significant and population density was not found to effect happiness (Rehdanz & Maddison, 2005), or mental health (Shields & Wheatley Price, 2005), or the Satisfaction with Life Scale (Peterson, Park, & Seligman, 2005). It is important to note that many of these studies control for income, at least to some extent, and since incomes are likely to be lower in rural areas, this may give a deceptive appearance of greater rural well-being.

For the purposes of geographical equity, the bivariate relationship between geographical area and SWB may be more helpful than a pure location effect. More research is

needed to explore the source of the benefit of living in less urban areas and to explore the effectiveness of recreating these in an urban environment.

4. Discussion

Measures of subjective well-being (SWB) can increasingly be found in large (sometimes longitudinal) datasets and, partly as a result, economists are showing increasing interest in them as proxies for utility. This review has focused on the findings from analyses of these large datasets to see if any clear conclusions can be reached about the determinants of SWB.

Many of the measures of SWB we review appear to be picking up differences in objective circumstances that we would expect to find. For instance, even simple one-item happiness and life satisfaction questions are showing significant differences between those who are employed versus unemployed, single versus living with a partner and so on. However, it is difficult to compare the results across studies. One important source of apparent discrepancy between results arises from the use of different categorisation of variables and choice of reference category. For example, marital status, employment status and education can all be categorised in slightly different ways (e.g. treating married and those cohabiting together or separately) and the choice of reference category can vary (e.g. the employment category may be compared to those employed, those out of the labour market or those employed and self-employed). Therefore, care is needed in making comparisons between studies.

Different findings may also arise due to the inclusion of different control variables e.g. both coefficient size and significance levels are often not robust to the inclusion of health. Moreover, many papers only include a full model without showing the impact of including different variables upon the relationship between the main independent and dependent variables. A greater understanding of the robustness of relationships could be gained if variables are systematically introduced into different models.

It has been shown by Ferrer-i-Carbonell and Frijters (2004) that controlling for the individual unobserved effects can impact on the findings of what influences SWB. Most studies reviewed here which compare different models find that controlling for fixed effects weakens the coefficient sizes and (as would be expected when only the within-subject effects are being considered) the significance level. Fixed effects models are unsuited to exploring the impact of variables with little or no variability within people (e.g. education), so whilst being theoretically superior in some respects, the evidence cannot be taken as evidence of non-significance of such variables. It is an ongoing challenge for researchers to develop methods to best explore the impact of variables with minimal individual life time variance yet which are also likely to be correlated with the unobserved individual effect.

Moreover, it is not always clear what should be controlled for in any model of SWB. Consider the case of expectations. If we control for income and other variables, we generally find that high expectations are detrimental to well-being (Graham & Pettinato, 2001, 'frustrated achievers'). But should we really be controlling for income, since people with high expectations generally earn more money, perhaps precisely because they have high expectations? In this example, along with issues of equity raised above, researchers and policy-makers may gain important information from bi-variate analysis.

Further investigation of existing data should consider more fully the household as a unit of analysis and the potential trade-offs in well-being across family members. For

example, commuting might be bad for the commuter but bring benefits (from higher income and a nicer house) to other household members. To date most well-being research has focused on the well-being of the individual. However, there are good reasons for also focusing on well-being at the household level. Magdol (2002), for instance, finds higher levels of depressive symptoms amongst women who feel they have sacrificed their careers for their partners. Whether or not any increases in their partner's well-being is sufficient compensation for this loss remains to be explored.

One very firm conclusion that can be drawn from our review is that the existing evidence base is not quite as strong as some people may have suggested and there are some important avenues for future research that could be explored with the existing panel datasets. This, in addition to the lack of clear evidence on causality, makes it difficult to make clear policy recommendations at this stage. Nevertheless, our findings suggest researchers should at least be aware of the impact of income, relative income, health, personal and community relationships, employment status and marital status in their analysis. We are also able to make some clear recommendations about where future research into some of these and other policy relevant variables should be directed.

The importance of income rank and perception of income rank are just beginning to be recognised, and new models of how income and happiness are related are being developed (see, for example, Rojas, 2007). More research is needed to understand how income rank impacts upon SWB, and how income comparisons work. This would include exploring to whom people compare themselves. A greater understanding of precisely why and how reference incomes impact on well-being is also needed, for example, is it driven by an ordering effect or by the distance between an individual's income and the income of those around them; does it operate by making the individual dissatisfied with their own income or does it create a pressure on individuals for them to overspend and put themselves under financial pressure? Recent evidence suggests that comparisons are upward looking (Ferrer-i-Carbonell, 2005) and that it is the income of the top income group which dominates the reference income (Blanchflower & Oswald, 2004b). This finding requires validating in a range of different settings.

Another policy relevant relationship is the one between education and SWB. However, the evidence currently available is ambiguous. Some studies find a positive relationship between each additional level of education and life satisfaction while others find that middle level education is related to the highest satisfaction. The coefficient on education is often responsive to the inclusion of other variables within the model and there is a suggestion that, like income, the benefits to education may be positional rather than absolute. The effect of social status and rank across a range of domains in life is therefore something that requires urgent attention.

The role of social capital and contact with local community has been under explored within the literature, particularly within fixed effects models. Future research is needed to understand the link between contact with friends, family and neighbours and well-being and critically the direction of causality in this relationship. Unlike many variables, there is unlikely to be a time delay in the causal pathways between social contact and well-being, which complicates any investigation into the direction of causality. One option may be the use of instrumental variables to address the potential endogeneity of the social capital variables. Such approaches could be used to establish causality more generally.

This review has highlighted a range of problems in making concise conclusions about the causes of SWB; these include some contradictory evidence (e.g. membership of organisations), concerns over the impact on the findings of potentially unobserved variables and the lack of certainty on the direction of causality. However, there is also some agreement on which things are associated with SWB (e.g. age, separation, unemployment and health), which have been confirmed using different data sets, different countries, different time periods and different methods of analysis. Economists have only fairly recently begun to pay attention to subjective measures of well-being and we hope that our review will serve to raise awareness amongst economists, psychologists and policy-makers of the factors associated with SWB.

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Appendix A

Single-item measures for happiness/life satisfaction in the primary 19 datasets

Survey	Details	Questions	Response scale in order of presentation (Many also have a 'don't know' option)
American's Changing Lives (ACL)	US Multistage stratified area probability sample	"Now thinking about your life as a whole. How satisfied are you with it? Are you . . .?"	"Completely satisfied", "Very satisfied", "Somewhat satisfied", "Not at all satisfied"
	Response rate (67%) Wave 1 1986 – 3617	(Wave 1) "My life could be happier than it is right now"	"Strongly agree", "Agree", "Disagree", "Strongly disagree"
	Wave 2 1989 – 2867	(Wave 2) "Taking all things together, how would say things are these days? Would you say you were . . .?"	"Very happy", "Pretty happy", "Not too happy"
	Wave 3 1994		

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Appendix A (*continued*)

Survey	Details	Questions	Response scale in order of presentation (Many also have a 'don't know' option)
British Household Panel Survey (BHPS)	Began in 1991 and is a multi-purpose study following the same representative sample of individuals. It is household-based, interviewing every adult member of sampled households. Wave 1 consists of some 5500 households and 10,300 individuals. Samples from Wales, Scotland Northern Ireland added later	<p>“How satisfied are you with your life overall?”</p> <p>Would you say that you are more satisfied with life, less satisfied, or feel about the same as you did a year ago?</p>	<p>1 = “not satisfied at all”, 7 = “completely satisfied”</p> <p>“More satisfied”, “Less satisfied”, “About the same”</p>
Canadian General Social Survey (CGSS)	Established in 1985, conducts telephone surveys from a sample selected across the 10 provinces. Until 1998, the sample size was about 10,000. This was increased in 1999 to 25,000	<p>Introduced in Cycle 12</p> <p>Presently, would you describe yourself as ...</p> <p>“I am going to ask you to rate certain areas of your life. Please rate your feelings about them” (Including) “Your life as a whole right now?”</p>	<p>“Very happy?”, “Somewhat happy?”, “Somewhat unhappy?”, “Very unhappy?”</p> <p>“Very satisfied”, “Somewhat satisfied”, “Somewhat dissatisfied”, “Very dissatisfied”</p>
Eurobarometer	300,000 people in 12 European countries Interviews are one to one in people's homes	“On the whole, are you ... or ... with the life you lead?”	<p>“Very satisfied”, “Fairly satisfied”, “Not very satisfied”</p> <p>“Not at all satisfied”</p>

Appendix A (continued)

Survey	Details	Questions	Response scale in order of presentation (Many also have a 'don't know' option)
European Social (Values) Survey (ESS)	Nationally representative cross section in over 20 European countries	"All things considered, how satisfied are you with your life as a whole nowadays?"	1 "Dissatisfied", 10 "Satisfied"
German Socio-Economic Panel Survey (GSOEP)	Households selected using multistage random sampling, all members of household asked to participate. Annual face to face interviews. The entire sample is over 24,000 respondents who participated in a least one of the 1–15 waves	"How <i>satisfied</i> are you at present with your life as a whole?" "How <i>happy</i> are you at present with your life as a whole?"	0 ("Completely dissatisfied"), 10 ("Completely satisfied") 0 ("Completely unhappy"), 10 ("Completely happy")
Household, Income and Labour Dynamics in Australia Survey (HILDA)	National probability interview sample Wave 1 2001 had 7682 households with 13,969 successful interviews Wave 2 interviews with 13,041, 12,000 from wave 1	"All things considered, how satisfied are you with your life?"	"The more satisfied you are, the higher the number you should pick. The less satisfied you are, the lower the number." "0 – 10"
Hungarian Household Panel Survey (Run by Tarki) (HHPS)	Between 1991 and 1997, a nation-wide sample of 2600 households was surveyed on a yearly basis	Please tell me to what extent you are satisfied with each of the following parts of your life. (Including) "the way your life has worked out" and "your standard of living"	0 ("Not at all satisfied"), 10 ("Fully satisfied")

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Appendix A (*continued*)

Survey	Details	Questions	Response scale in order of presentation (Many also have a 'don't know' option)
International Social Survey Programme (ISSP)	Annual programme of cross-national collaboration on surveys covering topics important for social science research. 41 member countries	"If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole?"	"Very happy", "Fairly happy", "Not very happy", "Not at all happy"
Latino-barometer	17spanish speaking countries (1997–2000) 1000 interviews per country by MORI, not nationally representative in all countries	"How satisfied are you with your life?"	"Not at all", "Somewhat", "Satisfied", "Very"
Midlife in the US (MIDUS)	US National probability sample, random digit dialling. English speaking. Over sampling of 65–74 years. (Has also included the PANAS and SWLS at some points.)	"Please rate your life overall these days on a scale from 0 to 10 where 0 is the worst possible life overall and 10 is the best possible life overall."	0 = Worst possible life overall, 10 = Best possible life overall
National Child Development Survey (NCDS), UK	Cohort of people born in Britain, from 03/03/58 to 09/03/58. Most recent data 2000, age 42. Of the initial 17,414 individuals 11,419 in 2000	"How satisfied are you with your life so far?" "How satisfied were you with your life 5 years ago?" "How satisfied do you expect to be with your life in 5 years time?"	0 ("Completely dissatisfied"), 10 ("Completely satisfied")

Appendix A (continued)

Survey	Details	Questions	Response scale in order of presentation (Many also have a 'don't know' option)
National Survey of Families and Households (NSFH), US	Representative sample living in English/Spanish speaking homes. 1987–1988 (Wave 1) 1992–1994 (Wave 2) 10,000 in panel	“Taking things all together, How would you say things are these days?”	1 (“Very unhappy”), 7 (“Very happy”)
Social Capital Community Benchmark Survey (SCBS), US	National sample of 3000 <i>r</i> and representative samples in 40 communities nationwide (across 29 states) covering an additional 26,200 respondents	“All things considered, would you say you are ...”	“Very happy”, “Happy”, “Not very Happy”, “Not happy at all”
Russian Longitudinal Monitoring Survey (RLMS)	An approximate probability sample (restricted by practical limitations) with households in 20 regions in Russia 1995–1998. Phase 1 = 6,334 households (17,154 individuals)	e.g. Wave 8 “To what extent are you satisfied with your life in general at the present time?”	“Fully satisfied”, “Rather satisfied”, “Both yes and no”, “Less than satisfied” “Not at all satisfied”
Swedish Level of Living Survey (LNU)	Taken several times between 1968 and 1991. In 1991 there were 6773 individuals	“We have now been through a lot of questions about your living conditions in different areas. How do you yourself view your own conditions? By and large, do you think that your situation is:”	“Very good”, “Rather good”, “Neither good nor bad”, “Rather bad”, “Very bad”

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Appendix A (continued)

Survey	Details	Questions	Response scale in order of presentation (Many also have a ‘don’t know’ option)
Swiss Household Panel Survey (SHPS)	1999–2004, roughly 4000 households and 7000 individuals per year	“In general how satisfied are you with your life?”	0 (“Not at all satisfied”), 10 (“Completely satisfied”)
US General Social Survey (USGSS)	30,000 individuals over period 1972–1994	“Taken all together how would you say things are these days? Would you say you are . . .?”	“Very happy”, “Pretty happy”, “Not too happy”
World Values Survey (WVS)	Grew out of the European Values Survey group (EVS). Nationally representative UK samples of around 1000 individuals in 1998 and 1999 collected by Mori and Gallup	“All things considered, how satisfied are you with your life as a whole these days?” (2005) “Taken all things together, would you say you are . . .”	1 “Dissatisfied”, 10 “Satisfied”, “Very happy”, “Quite happy”, “Not very happy”, “Not at all happy”

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