

## **The Promotion of Local Wellbeing: A Primer for Policymakers**

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### **Abstract**

There is growing interest among policymakers in the promotion of wellbeing as an objective of public policy. In particular, local authorities have been given powers to undertake action to promote wellbeing in their area. Recent advances in the academic literature on wellbeing are giving rise to an increasingly detailed picture of the factors that determine people's subjective wellbeing (how they think and feel about their lives). However, the concept of subjective wellbeing is poorly understood within local government and much of the evidence base is extremely recent. I therefore review the literature on the definition, measurement, and determinants of wellbeing, and discuss some of its implications for local public policy.

**Keywords:** Wellbeing, Local government, Public policy

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## 1 Introduction

There is now a growing global interest in the promotion of wellbeing as an objective of public policy. The UK, for example, introduced The Local Government Act 2000 giving local authorities broad new powers to undertake action to promote or improve the wellbeing of their area (the wellbeing power).<sup>1</sup> The test for local government intervention under the Act is simply whether the proposed action is likely to promote or improve the economic, social, or environmental wellbeing of their area.

At the national level, David Cameron has spoken of maximising “gross national happiness” as opposed to gross national product. The Office for National Statistics made its first systematic attempt to measure national wellbeing in April 2011 (Tinkler and Hicks, 2011), while the Whitehall Wellbeing Working Group (W3G) has also been formed to examine the definition and measurement of wellbeing. At the international level, in 2008 French President Nicholas Sarkozy commissioned two Nobel-prize winning economists to write the now influential Stiglitz-Sen report (Stiglitz et al., 2009), with the aim of identifying the limits of GDP as an indicator of economic performance and social progress.

This growing interest among policymakers is largely the result of an earlier explosion of academic interest in the concept of wellbeing. In particular, there is now a considerable body of literature – spanning at least economics, medicine, philosophy, psychology, social geography, and sociology – investigating the definition, measurement, and determinants of individual wellbeing.

Although this literature provides a growing body of evidence, many of the advances are too recent to have been widely disseminated and understood within local government. For instance, research by the Department for Communities and Local Government has found

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<sup>1</sup> Plans to extend the existing wellbeing power defined in the 2000 Act have recently been published in the 2010 Decentralisation and Localism Bill.

that the wellbeing power granted to UK local authorities is under-utilised and subject to widespread misunderstandings (Department for Communities and Local Government, 2008a,b). This lack of understanding may be holding back the implementation of the promotion of wellbeing as a practical tool of policy.

In this paper, therefore, I attempt to summarise the main developments to have emerged from the academic study of wellbeing, and discuss their relevance for local public policy. As such, the paper does not attempt to be exhaustive: I attempt instead to cover what I see as the most relevant aspects of the literature for policymakers in local government.<sup>2</sup>

The plan of the paper is as follows: Section 2 discusses the concept of wellbeing. I argue that the view of wellbeing that has moved to the forefront of academic thinking is of a subjective quantity that reflects how people think and feel about their lives.

Section 3 discusses the question of the measurement of wellbeing. I review direct approaches to measuring subjective wellbeing, an area that has been the source of much methodological development in recent years. I consider whether objective policy outcomes that have traditionally been monitored by local government, such as income levels or employment rates, are good indicators of how people think and feel about their lives. I argue that this may not always be the case. For instance, there is now evidence from studies in developed countries that wellbeing is no longer growing in response to growth in national income (Easterlin, 1995, 2001).

Section 4 reviews what is known about the economic, social, and environmental determinants of wellbeing from statistical analyses of large wellbeing datasets. In particular, I focus on the differing roles of income and social capital in creating wellbeing. Section 5 draws together the findings of the previous sections to discuss the implications of our understanding of wellbeing for policymakers in local government. Section 6 concludes.

## 2 What is Wellbeing?

The term “wellbeing” has long been used within local government, but not typically with any great consistency or precision. For instance, guidance on the 2000 Act only notes that the terms “economic, social, and environmental wellbeing” are “sufficiently broad to encompass both cultural wellbeing and the promotion or improvement of the health of a council’s residents or visitors to the area” (Department for Communities and Local Government, 2000). However, different to the tripartite definition of wellbeing of the 2000 Act (economic, social and environmental), the set of UK National Indicators used to evaluate local authorities refers to “adult health and wellbeing”, thereby appearing to associate wellbeing closely with health outcomes (Department for Communities and Local Government, 2007). This lack of clarity over what is meant by wellbeing appears an important practical obstacle to the implementation of policy to promote wellbeing.

### 2.1 *Objective and Subjective Wellbeing*

Academics have had an equally difficult task in pinning down the concept of wellbeing: the Stanford Dictionary of Philosophy devotes 11-pages to the subject. Essentially, however, philosophical use amounts to the notion of how well a person's life is going for that person (Crisp, 2008). A key aspect of this definition is that wellbeing is subjective to each individual, in that presumably it is only the individual themselves that is in a position to judge how well their life is going for them. This gives rise to the concept of subjective wellbeing (SWB) as a person’s subjective evaluation of their own lives.

By contrast, the concept of objective wellbeing (OWB) refers to an objective view of a person’s wellbeing given their objective circumstances. Various writers have proposed the existence of a set of ‘basic needs’ that are necessary for individuals to develop their own wellbeing, such as food, shelter, education, health, security, and freedom (e.g.

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<sup>2</sup> For the reader seeking further depth, other, more focused, reviews are available of the definition (Crisp, 2008), measurement (Kahneman and Krueger, 2006) and determinants (Dolan et al., 2008) of wellbeing. Other broader, but older, reviews of the wellbeing literature include Frey and Stutzer (2002a,b).

Nussbaum, 2000; Rawls, 1971; Sen, 1999). As a result, OWB is commonly measured by the level of provision of these basic needs.<sup>3</sup>

Although it is measures of SWB that are now at the forefront of academic analysis, the concept of OWB is currently the more widely understood by policymakers. For instance, the UK National Indicators used to evaluate local government consist primarily of objective indicators such as crime, mortality and employment rates. The traditional popularity of OWB among policymakers is probably because it can be measured by tangible indicators that are relatively straightforward to collect and interpret. By contrast, measuring SWB requires getting to grips with intangible concepts such as people's thoughts and emotions, which until recently it was thought impossible to measure and interpret reliably.

Although the promotion of OWB has proved useful as a goal for policymakers, there are a number of difficulties. First, in attempting to set down the factors necessary for the development of wellbeing, policymakers may unwittingly end up prescribing what factors *should* generate wellbeing. For instance, quality of life indices are often constructed by geographers to compare the attractiveness of different localities by forming a composite index based on objective measures such as crime rates, average rainfall, congestion etc.<sup>4</sup> However, some individuals may prefer high rainfall, and a certain section of the population almost certainly prefers a high crime rate (Bell, 2005). Therefore, indices of OWB may simply reflect the values of those who construct them.

Second, studies of SWB have thrown up awkward questions of causality. For instance, while from an OWB perspective an increase in life expectancy is thought to cause an increase in wellbeing, it may actually be that increases in wellbeing cause an increase in life expectancy. There is evidence that happier people tend to live longer and are less susceptible to, and are more able to cope with, a range of diseases and traumas. For

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<sup>3</sup> Various theories in social psychology, most famously Maslow's (1943) hierarchy of needs, go further to posit a range of 'higher order' needs, such as friendship and environmental mastery, which sit on top of basic needs. This idea leads to 'flourishing' or 'eudaimonic' concepts of wellbeing that incorporate both objective and subjective factors (see e.g. Ryan and Deci, 2000; Ryff, 1989).

instance, a study of nuns finds that sisters who showed greater signs of depression on entering the convent in their youth (as assessed from written autobiographies at the time) were more prone to a number of health problems at a later time (Snowdon, 2001) and died earlier (Danner et al., 2001).

## **2.2 *Interpretations of Subjective Wellbeing***

The concept of SWB has a number of differing interpretations in the literature, unified by their primary concern with the respondents' own internal judgments of wellbeing, rather than what policymakers, academics, or others consider important (Diener and Suh, 1997). Here I discuss three such interpretations: desire-fulfilment, hedonic, and deliberative.

Harsanyi (1977) proposes a desire fulfilment interpretation that defines SWB in terms of the degree to which people are able to fulfil their desires or satisfy their preferences. For the purposes of public policy, however, the desire-fulfilment interpretation is problematic. For instance, there are some desires that surely should not be satisfied, including those that are misguided (because of a lack of information) or that are antisocial (Dolan and White, 2007).<sup>5</sup>

Also, implementation of the desire-fulfilment interpretation requires people to predict how their future wellbeing would change if a particular desire were fulfilled. However, there appear to be pervasive focusing effects whereby, when people think about how much an event will affect them, they focus on that event as being much more important to their lives than it turns out to be (Dolan and Metcalfe, 2010; Schkade and Kahneman, 1998). Also, people often overestimate how long particular emotions will last (Wilson and Gilbert, 2003).

By contrast, hedonic interpretations of wellbeing, which go back at least to Bentham (1789), emphasize SWB as reflecting the balance of pleasure and pain. A distinctive aspect of the hedonic approach is its emphasis on people's instantaneous positive and

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<sup>4</sup> See e.g. the Halifax Quality of Life Survey published annually for the UK since 2006.

negative moods throughout the day. Accordingly, a person's overall wellbeing is argued to be the sum of their wellbeing at each separate moment in time (Kahneman et al., 2004).

However, it is unclear as to the precise relationship between people's moods and emotions over the day and their overall assessment of their wellbeing. People may weight short but intense experiences more strongly than long, but less intense, experiences (Kahneman et al., 1997). Personal recollections of earlier wellbeing are sometimes at odds with the person's own 'moment to moment' accounts of wellbeing: people appear to forget how long certain pleasures and pains lasted for (Kahneman, 2000).

A practical difficulty with the hedonic interpretation of wellbeing from the perspective of policymakers is that, to be measured, it requires the intensive monitoring of people's positive and negative moods and emotions throughout the day. This makes surveying the wellbeing of a large population unfeasible.

The final interpretation of SWB I discuss is by now the prevailing interpretation in the literature: the evaluative interpretation. Originating in positive psychology, the evaluative interpretation emphasizes SWB as an evaluative judgment across all areas of life as to how people think and feel about their lives.

The evaluative interpretation of SWB is, from a philosophical perspective, arguably no better or worse than other interpretations of SWB. Its popularity instead appears to stem from its ease of measurement (relative to the hedonic interpretation) and from its appeal for public policy (relative to the desire fulfilment interpretation). I take up the first of these issues in the next section.

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<sup>5</sup> Some economists have argued that, as a way around these difficulties, public policy should instead promote a set of "idealised" or "informed" preferences (Harsanyi, 1996; Kahneman and Sugden, 2005). However, how to construct such a set of preferences is unclear.

### 3 Measuring Subjective Wellbeing

If you want to know how a person subjectively evaluates their life, a sensible starting point is to ask them.<sup>6</sup> For this reason, the standard approach to measuring (evaluative) wellbeing is through a question of the following type: “All things considered, how satisfied are you with your life as a whole these days?” The response categories range from 1 to 10 with 1 being “dissatisfied” and 10 being “satisfied”. Questions of this type have been included for many years in international surveys such as the World Values Survey and Eurobarometer, as well as in large national surveys such as the US General Social Survey and the British Household Panel Survey.

It is not immediately clear that asking such wellbeing questions produces meaningful responses. One concern is the question of reliability: will a person who rates their wellbeing as  $X$  on one day rate themselves again as  $X$  on another day so long as no significant changes in their life circumstances have occurred? A second concern is validity: do the ratings people provide accurately tap into the appropriate underlying concept of wellbeing? A third concern is interpersonal comparability: are two people who provide the same rating equally happy with their lives?

The first of these concerns, the reliability of self-reported SWB, can be assessed through statistical techniques. Studies which employ similar wellbeing questions to that discussed above report high levels of internal reliability (see e.g. Diener et al., 1985; Lepper, 1998; Peterson et al., 2005).

The second of these concerns, the validity of self-reported SWB, has been assessed by examining whether responses correlate with other measures of wellbeing. Research finds a strong positive correlation between the answers to wellbeing questions and emotional

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<sup>6</sup> As the economist Alan Blinder once famously said: “If particles could talk, would physicists refuse to listen?”



expressions, like smiling, frowning and brain activity (Davidson, 2004; Fernandez-Dols and Ruiz-Belda, 1995; Sandvik et al., 1993; Shizgal, 1999).<sup>7</sup>

Another approach examines whether wellbeing ratings correlate with other physiological measures (biomarkers). As well as Snowdon's (2001) nun study discussed in Section 2, Cohen et al. (2003) perform an experiment in which subjects are asked a wellbeing question and are subsequently injected with a form of the cold virus. The authors find that people with higher initial SWB are not only less likely to develop a cold following exposure to the virus but also tend to recover more quickly if they do catch a cold. Ebrecht et al. (2004) show a strong negative correlation between healing times of an experimentally induced wound and wellbeing ratings. Blanchflower and Oswald (2008) relate differences in wellbeing across countries to differences in self-reported high blood pressure.<sup>8</sup>

A final approach examines whether wellbeing ratings are predictive of behaviour. Although more research is needed in this area, we know that there is a strong and consistent relationship between reported SWB and suicide (Daly and Wilson, 2009; Koivumaa-Honkanen et al., 2001). There is also early evidence that reported wellbeing is positively related to labour productivity (Oswald et al., 2008).

The final concern, the interpersonal comparability of self-reported SWB, arises as it would seem that the phrasing of the wellbeing question leaves each person free to define wellbeing as he or she pleases. However, there is some evidence to suggest that people interpret the SWB scale in largely the same way. First, individuals are able to recognise and predict the satisfaction level of others. In interviews in which respondents are shown pictures or videos of other individuals, respondents are quite accurate in identifying whether the individual shown to them is happy, sad, jealous, etc (Diener and Lucas,

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<sup>7</sup> It is also reassuring that, in general, people have little trouble answering such wellbeing questions. For large-scale surveys such as the US General Social Survey non-response rates are less than one per cent (Easterlin, 2001).

<sup>8</sup> This last finding, however, could be simply due to response style, as both wellbeing and blood pressure are self reported. Relating blood pressure to clinically measured blood pressure will therefore be an important future step.

1999). Self reports of SWB tend to converge with ratings made by significant others (spouse, close friend, or relative), and by minimally trained observers (Lepper, 1998; Redelmeier and Kahneman, 1996).

Cantril (1965) carried out an intensive survey in fourteen countries with highly diverse cultures and at widely different stages of socio-economic development, asking open-ended questions about what people want out of life. His findings suggest that, in practice, the kinds of things chiefly cited as shaping happiness are for most people much the same.<sup>9</sup>

### ***3.1 Are Measures of SWB Useful for Policymakers?***

The encouraging findings regarding the reliability, validity and comparability of evaluative measures of SWB have led to the concept being taken seriously by governments around the world. However, to be of practical use to policymakers in local government, the measurement of SWB needs also to be cardinal, unbiased, and sensitive to changes in wellbeing (Dolan and Peasgood, 2008).

Cardinality relates to the idea that, for most purposes, policymakers in local government need to be able to know *how much* a policy changes wellbeing in their area, as well as whether it goes up or down. Strictly speaking, however, all we know for sure about wellbeing ratings are their ordinal properties, i.e. that a rating of 6 implies a higher wellbeing than a rating of 5. Recent research, however, suggests that wellbeing ratings can be treated as cardinal, so, for instance, the difference in wellbeing between the ratings 2 and 3, is approximately the same as the difference in wellbeing between the ratings 5 and 6 (Ferrer-i-Carbonell and Frijters, 2004; Layard et al., 2008).

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<sup>9</sup> Attempts have also been made to measure other interpretations of wellbeing, although these have occurred on a smaller scale. For instance, hedonic wellbeing can be measured by the Experience Sampling Method, which asks people to assess their current or recent moods and emotions on a numerical scale at different points in the day (see e.g. Csikszentmihalyi and Hunter, 2003). The Day Reconstruction Method of Kahneman et al. (2004) asks people to write a diary of the main events or episodes of the day before (i.e. yesterday) and evaluate their emotions during each of these events or episodes. Other survey-based methods of measuring wellbeing have been developed that attempt to capture recent emotions over the past two-weeks to one-month. These include the Positive and Negative Affect Scale (PANAS) of Watson et al. (1988) and the Affectometer 2 of Kammann and Flett (1983). Dolan, Peasgood and White (2006) summarise the evidence on the reliability and validity of these approaches.

Unbiasedness is the idea that wellbeing ratings should, on average, reflect the true underlying level of wellbeing. It is known, however, that ratings on SWB scales are subject to occasionally pronounced context effects (Schwarz and Strack, 1999).<sup>10</sup> However, if these effects are simply ‘white noise’ then they effectively cancel out across large numbers of people, and do not affect estimates of average wellbeing, nor bias the estimated coefficients from regression based techniques for analysing wellbeing (which I describe later).<sup>11</sup>

The sensitivity of wellbeing ratings to underlying wellbeing is essential to policymakers, so as to make it possible to measure the changes in wellbeing that arise as a result of policy interventions. A key difficulty here is adaptation – the tendency for people to habituate to changes in their objective circumstances, such as income, living conditions and health. Although winning a lottery or losing a limb initially provokes euphoria or despair, in the longer term quadriplegics report similar levels of SWB to lottery winners (Brickman et al., 1978; Oswald and Powdthavee, 2008).

Adaptation can also result in what Dolan and White (2007) call the “happy slave” situation in which policymakers do not act on behalf of people, who by objective standards warrant greater support, because they fail to express any overt dissatisfaction with their situation.

Despite these issues, it does not appear that adaptation is an insurmountable problem for the use of SWB in public policy. Adaptation does not appear to be universal across domains, and there are a number of experiences – both positive and negative – to which people appear never fully adapt. These experiences include friendships, pain, noise and unemployment (Clark, Diener, Georgellis and Lucas, 2008; Frederick and Loewenstein,

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<sup>10</sup> Responses are affected by, for instance, the ordering of the questions (Schimmack and Oishi, 2005), the presence of a handicapped person in the room (Schwarz and Clore, 1983), and even the weather (Strack et al., 1988).

1999). Also, wellbeing measures are sufficiently sensitive to show robust change following changes in, for instance, income, marriage, health, employment status, and frequency of contact with friends and family.

In summary, although the discussion of cardinality, unbiasedness and sensitivity raises some difficult issues, the measures of (evaluative) SWB described in this section contain “substantial amounts of valid variance” (Diener, 1984), and may therefore have a role in informing local public policy.

### ***3.2 Do Measures of SWB and OWB Coincide?***

If measures of SWB and OWB are found to tell the same story, policymakers could, after all, measure SWB simply by measuring OWB. However, what evidence we have suggests that how people think and feel about their lives is not necessarily captured by measures of their objective circumstances. Within local government, research into reported satisfaction with public services (e.g. refuse collection) highlights that although objective data show an improving standard of service, nevertheless there has been a tendency for reported satisfaction to fall (James, 2009). Actual crime rates and the perception of local crime among residents are not highly correlated (Carp and Carp, 1982): perceptions of crime and safety influence neighbourhood satisfaction, even after controlling for objective measures of crime (e.g. Parkes et al., 2002; Sirgy and Cornwell, 2002).

Cross-country measures of OWB such as the Human Development Index (HDI) exhibit a markedly different development over time than measures based on SWB (Blanchflower and Oswald, 2005). Despite sustained rises in incomes in many developed countries, average levels of happiness are stationary over time (Easterlin, 2001).

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<sup>11</sup> There is also evidence to suggest that some people may alter their true responses in order to give a socially appropriate response. For instance, a recent widow might perceive a social expectation to report a low level of wellbeing (Carstensen and Cone, 1983).

## **4 Determinants of Wellbeing**

To promote wellbeing, policymakers must understand how measures of OWB, such as the rate of unemployment within an area, feed through into measures of SWB. In this section I therefore review some of what has been learned of the determinants of wellbeing.

Several recent studies have attempted to infer the importance for wellbeing of particular policy-relevant domains by asking people a global wellbeing question followed by several domain specific questions relating to satisfaction with finances, housing, health etc (see Easterlin and Sawangfa, 2007; Kapteyn et al., 2010; Van Praag et al., 2003). The most recent of these studies (Kapteyn et al., 2010) finds that satisfaction with the relationship with partners/family, health, job and finances are the most important domains for wellbeing (in that order), while Van Praag et al. (2003) also find a role for the satisfaction with one's environment. Given these findings, it appears sensible to follow the tripartite definition of wellbeing found in the 2000 Act, by reviewing what is known regarding the economic, social, and environmental determinants of wellbeing.

### ***4.1 Economic Determinants of Wellbeing***

For most people, economic factors such as income and employment are important determinants of wellbeing. For instance, the studies by Easterlin and Sawangfa (2007) and Van Praag et al. (2003) report a stronger role for finances than for health.

The role of income in wellbeing is a complex area. On the one hand, wealthier individuals within an area are happier. However, at least for developed countries, average wellbeing levels appear to be remaining constant in spite of continued economic growth (Easterlin, 1974, 1995) – a finding often termed ‘Easterlin’s paradox’. The most prominent emerging explanation of the paradox is that, beyond a point, the benefits of income may be relative (or positional) rather than absolute (Clark, Frijters and Shields, 2008; Rablen, 2008). Therefore, if one person gets richer, they get happier, but if everyone gets richer, nobody gets any happier.

There may also be other contributory factors to the paradox. There is some evidence in the UK of a trend towards work getting more intensive and stressful (Green, 2004). There is also evidence from the US of an increase in economic insecurity, which is linked to ill health (Ferrie, 2001) and reduced wellbeing (Osberg and Sharpe, 2002).

More generally, job satisfaction is an important determinant of wellbeing given the amount of peoples' lives spent at work. Although there is some evidence relating to the wellbeing of different types of employment – there is a positive wellbeing effect from self-employment (Blanchflower and Oswald, 1998) – the biggest effect on wellbeing is simply from having a job. There is a wealth of evidence to show that unemployment has a large and persistent negative impact on wellbeing, especially for men (Clark and Oswald, 1994; Oswald, 1997).

#### ***4.2 Social Determinants of Wellbeing***

The social determinants of wellbeing are potentially numerous and I shall focus on just two: health and social capital (strength of social relationships). Studies consistently show a strong relationship between wellbeing and both physical and psychological health, although part of the effect could be due to reverse causation from wellbeing to health (Dolan et al., 2008). For instance, Shields and Wheatley Price (2005) find powerful effects on wellbeing (exceeding those associated with being separated from a marriage partner and unemployment) of recent acute (short-term) illness lasting more than two days and from having been an in-patient in hospital during the previous year. A difficulty, however, is that wellbeing scores are much less sensitive to chronic (as opposed to sudden or short-term) conditions because of people's partial ability to adapt (Groot, 2000).

There is also evidence that exercise is associated with wellbeing. Causation appears to not only arise indirectly through the positive impacts of exercise on physical health, but also directly through effects of exercise on mental functioning (Penedo and Dahn, 2005). For instance, studies indicate that physical activity improves mood and reduces

symptoms of depression and anxiety (Baker et al., 2005; Motl et al., 2004; Ross and Hayes, 1988; Stephens, 1988).

The role of social capital (the strength of an individual's social networks - encompassing family, neighbourhood and community ties) on wellbeing is the subject of growing academic interest.<sup>12</sup> Much evidence at both the aggregate and individual level suggests that social connections are among the most robust predictors of wellbeing (Stiglitz et al., 2009). Moreover, the reported effects are large (see, e.g., Powdthavee, 2008). The relationship with one's partner and family has been found to be the single most important domain for wellbeing (Bacon et al., 2010; Kapteyn et al., 2010).

People who have frequent contacts with family, friends and neighbours have SWB almost a full point higher on the 10-point SWB scale than others with no such contacts (Helliwell, 2006). Part of this effect, however, might simply be reverse causality – happy people may go out more, and thereby attract more friends. Being married or in a stable relationship is almost universally found to be associated with higher wellbeing (see e.g. Diener et al., 1999).<sup>13</sup>

Because norms such as reciprocity and trustworthiness are near-universal concomitants of dense social networks, researchers have also sought to measure generalised and specific measures of trust - that is, the belief that others around you can be trusted.<sup>14</sup> Although this is a relatively new area, studies find that generalised trust is associated with higher wellbeing (Bjørnskov, 2007; Helliwell and Putnam, 2004).

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<sup>12</sup> Following Putnam (2000), social capital is sometimes broken down into bridging (bonds of connectedness that are formed across diverse social groups) and bonding (ties within a homogenous group, e.g. close friends, relatives and neighbours), but practical implementation of this distinction in empirical research remains a challenge.

<sup>13</sup> Fowler and Christakis (2008) report evidence suggesting that SWB can spread in a beneficially contagious way from one person to another within a social network, although their analysis is hotly disputed (see, e.g., Cohen-Cole and Fletcher, 2008).

<sup>14</sup> The canonical generalised trust question is of the form “Do you think that people can generally be trusted, or (alternatively) that you cannot be too careful in dealing with people?”

As well as generating ‘internal’ effects for members of the network, social networks can also generate externalities. For instance, neighbourhood networks such as Neighbourhood Watch may deter house crime, which could benefit residents outside the scheme. However, not all the externalities of social capital need be positive: some networks are used to orchestrate violence, for example. Importantly, the available evidence suggests that the externalities generated by income and social capital are different. Whereas the externalities from individual income seem to be negative (because of a concern for relative income), the externalities from social capital are found to be neutral to positive (Helliwell and Putnam, 2004).

### ***4.3 Environmental Determinants of Wellbeing***

The local environment in which people live their lives can affect wellbeing in many ways. For instance, factors such as noise, air and water pollution can have a direct impact on health outcomes. Other environmental conditions can affect health indirectly through processes such as climate change and natural disasters that affect the health of ecosystems.

What early evidence we have on the size of environmental factors on wellbeing suggests that these may be smaller than those due to social capital, health and income (Van Praag et al., 2003). Nevertheless, research has been able to detect small, but statistically significant, impacts of environmental factors on wellbeing. For instance, Van Praag and Baarsma (2005) detect a negative association between wellbeing and aircraft noise in the vicinity of Amsterdam’s Schipol Airport. Environmental factors such as air pollution (Luechinger, 2009; Welsch, 2006) and climate (Rehdanz and Maddison, 2005) have also been shown to impact negatively on wellbeing.

Green spaces, such as local parks, appear to promote wellbeing in a number of ways. First, they facilitate outdoor exercise, which has been found to have even more positive mental health benefits than exercise of other kinds (Pretty et al., 2005). The psychological benefits of jogging in an urban park outweigh those of street jogging (Bodin and Hartig,



2003). Second, they can also have important effects on social capital at the community level through giving people a place to meet, and children to play (Marmot et al., 2010).

Last, perceptions of the safety of an area may also matter for wellbeing, although measurement of the losses of wellbeing due to victimisation and the fear of crime remains difficult. One problem is that victimisation is closely correlated with measures of socio-economic status, making disentangling the role of these two variables empirically difficult (Dolan et al., 2008). However, the existing evidence discerns a detrimental impact on wellbeing of living in an unsafe or deprived neighbourhood (Ferrer-i-Carbonell and Gowdy, 2007; Shields and Wheatley Price, 2005).

## **5 Implications for Policymakers**

The determinants of wellbeing discussed in Section 4 have potential policy implications at all levels of government: local, national and international. A good discussion of the latter two levels is provided in Di Tella and MacCulloch (2006). Here I review some of implications most relevant to local government.

### ***5.1 Wellbeing as a Means of Valuing Non-Monetary Costs and Benefits***

There are a great many non-market goods that policymakers would, in principle, like to be able to place a money value on for the purposes of cost benefit analysis. The principal tool for valuing non-market goods at present is the contingent valuation, or willingness-to-pay (WTP) approach, whereby people are asked to state the maximum amount that they would pay to, for instance, protect a local park from being developed into houses. This approach is, however, problematic for a number of reasons. First, its theoretical foundations within economic theory are weak (Blackorby and Donaldson, 1990). Second, responses to WTP questions are prone to a variety of potentially serious biases (Carson and Hanemann, 2005). For instance, if a policy is presented to people either as a whole, or split into several parts, the combined WTP valuation of the parts often exceeds the WTP evaluation of the whole (the part-whole bias).

Measures of wellbeing offer an alternative approach. The essential idea is that if it is possible to show by how much a given non-market good affects wellbeing, then – based on what is understood of the relationship between individual wellbeing and income – it is possible to estimate the required income compensation that would hold wellbeing constant (Dolan and White, 2007).

For example, suppose that the average level of wellbeing is found to be 0.5 points lower in areas of high crime (e.g. 3.0) than in areas of low crime (e.g. 3.5), after controlling for all other differences between the two areas. If 3.5 on a wellbeing scale is associated with an income of £30,000 per annum, compared to £25,000 for a wellbeing of 3.0, then the monetised cost to residents in the high-crime area of the extra crime can be inferred as £5,000 a year. This is essentially the technique used by Van Praag and Baarsma (2005) to appraise the options of paying compensation, or offering noise insulation, to residents living near Schipol Airport.<sup>15</sup>

Although more research is needed, early evidence suggests that the wellbeing approach to valuation yields different results to the WTP approach when both are applied to the same policies (Dolan and Metcalfe, 2008). As the wellbeing approach does not draw respondents' attention to particular policies, it may suffer less from the types of focusing effects discussed in Section 2.2. Therefore, some authors have hypothesised that the wellbeing valuation approach will give more reliable estimates than the existing WTP approach (Powdthavee and Van Den Berg, 2011), but as yet this hypothesis is untested.

## ***5.2 Wellbeing as a Means of Choosing Between Policy Priorities***

One of the principal difficulties in evaluating policy options is the need to rank priorities in spite of a lack of clear a-priori reasons for saying that one domain of life is more important than another. For instance, in deciding whether or not to place a retail park on recreational land, how should local government weigh up the economic benefits in

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<sup>15</sup> Monetary valuations have also been inferred from wellbeing equations for many other non-market goods. For instance, marriage brings approximately the same amount of happiness, on average, as having an extra £70,000 of income per annum (Clark and Oswald, 2002).

respect of increased local employment against the loss of recreation suffered by residents?

Indices of OWB, such as the HDI, respond by simply assigning equal weight to each domain. However, wellbeing measures offer the potential to provide a set of weights that can be used to shape local policy priorities. Local authorities can determine these wellbeing weights specifically for the people in their locality. The data required to produce such weights could be collected through the addition of questions to existing local surveys, and the computation of the weights could be achieved, if not in-house, then through effective links with local academic institutions.

A form of wellbeing weights is already employed within the narrower domain of healthcare. In the UK, decisions as to which drugs should be available at state subsidised prices are made on the basis of a measure of Quality Adjusted Life Years (QALYs). The ‘quality’ dimension of QALYs is based on asking members of the public to think about how many years of life they would be willing to trade to avoid different states of health.

### ***5.3 Policy Perspectives***

As well as providing tools for future policy development, the existing body of knowledge on the determinants of wellbeing already points towards a number of policy perspectives for local government.

#### *Economic Wellbeing*

The negative wellbeing externalities of income suggest that driving up incomes in one locality will promote local wellbeing, but perhaps at the expense of the wellbeing of people in adjacent localities (Luttmer, 2005). Raising incomes might therefore be self-defeating across local government as a whole in respect of raising wellbeing. Given the existence of evidence that wellbeing may be negatively related to income inequality (Dorling, 2010; Wilkinson and Pickett, 2009), the Stiglitz-Sen report instead argues that policymakers should focus more on the distribution of income in an area, and less on simply the average level of income (Stiglitz et al., 2009).

It is argued that an income strategy that focused on raising the incomes of the poorest in an area (who may still reap wellbeing from income increases) would outperform an across-the-board increase in incomes (the effect of which would largely be lost through people's concern for relative income).

When asked how local government might improve their wellbeing, many people might propose a cut in their council tax bill. Therefore, the promotion of wellbeing is entirely consistent with the traditional public sector principle of best value. In particular, local government needs to ensure that the wellbeing it generates for its area outweighs the loss of wellbeing entailed by the payment of taxes.

### *Social Wellbeing*

Studies of wellbeing highlight social capital as an important source of wellbeing. Moreover, the wellbeing created by social capital appears to generate positive externalities for the wellbeing of others, whereas wellbeing created by greater wealth appears to generate the opposite effect. Therefore, the promotion of wellbeing provides a rationale for subsidising activities that encourage people to interact with others in their local area, such as walking groups, book clubs, antenatal classes, voluntary organisations, and local sports teams. Nevertheless, it can be notoriously difficult for policymakers to, for instance, influence how often people speak to their neighbours. Local government may, therefore, need to collaborate with the voluntary and community sector in attempting to deliver these outcomes (Hewes et al., 2010).

On health, the promotion of wellbeing suggests the need for a holistic concept of health that embraces psychological and physical 'wellness' as well as illness. We do not yet understand whether there are effective interventions that can systematically improve mental health, but some have argued that "mental resilience" is something that children can be trained to acquire (Bacon et al., 2010). The provision by local government of green spaces and leisure facilities as a means of promoting of exercise is strongly supported by wellbeing studies.

### *Environmental Wellbeing*

The promotion of wellbeing may have implications for the sustainable development of areas – defined as “development that meets the needs of the present without compromising the needs of future generations to meet their own needs” (World Commission on Environment and Development, 1987). There are, of course, tensions between wellbeing and sustainability. For instance, getting people to switch to public transport would have a positive impact on local air quality, but might simultaneously reduce wellbeing by increasing time spent commuting (Stutzer and Frey, 2008) and reducing the time for recreational activities (Cushman et al., 2005).

However, the promotion of wellbeing appears also to offer potential synergies with sustainable development. For instance, making short journeys on foot rather than by car is environmentally more sustainable, and is likely to improve wellbeing through greater exercise (Dolan, Peasgood, Dixon et al., 2006).

## **6 Conclusion**

Local government has always been interested in increasing the wellbeing of its citizens. Recent advances in the multi-disciplinary academic literature on wellbeing are beginning to make possible a systematic approach to this goal, but implementation has so far been hampered by a lack of understanding.

The dominant definition of wellbeing for policy purposes is an evaluative measure of how people think and feel about their lives. The most common method for measuring wellbeing is through self-reports: asking people to rate their overall satisfaction with their lives on a numerical scale. The reliability of wellbeing data collected in this way has been examined extensively in the literature. Although these data can contain a great deal of noise, the evidence also suggests that they contain a degree of valid variance of relevance to policymakers.

There is growing evidence on the determinants of wellbeing, although there remain many areas where longitudinal data needs to be brought to bear to resolve difficult questions of causality. Income, it appears, is associated with negative wellbeing externalities, with evidence that making one area richer may make people in that area happier, but at the expense of others in surrounding areas. Non-economic variables, such as measures of social capital, are also found to strongly influence individual wellbeing, but differ from income in that they appear to generate positive externalities for other people's wellbeing. Small, but statistically significant, effects on wellbeing are associated with environmental disamenities such as noise pollution.

Utilising the growing understanding of wellbeing could help local government in the current fiscal environment, where sharp budget cuts are necessitating difficult decisions as to which local services should be reduced, and by how much. More generally, local government regularly face conflicts of interest between local stakeholders, such as the development versus conservation kind that arise in land-use planning, where wellbeing offers an additional tool to policymakers.

However, the use of wellbeing is by no means a panacea. For example, were wellbeing indices to indicate that an income re-distribution to the poorer sections of a local community would outweigh the losses of higher taxes to other sections of the community, it is unlikely that richer sections of the community would simply consent to be taxed. Moreover, if, in future, measures of wellbeing become politically relevant then individuals may have an incentive to mis-report their wellbeing (Frey and Stutzer, 2008). It is nevertheless hoped that this review will contribute to informing the use of wellbeing by policymakers at the local level.

## References

- Bacon N, Brophy M, Mguni N, Mulgan G and Shandro A (2010) *The State of Happiness: Can Public Policy Shape People's Wellbeing and Resilience?* London: Young Foundation.
- Baker LA, Cahalin LP, Gerst K and Burr JA (2005) Productive activities and subjective well-being among older adults: the influence of number of activities and time commitment. *Social Indicators Research* 73: 431–458.
- Bell D (2005) *Well-being and Quality of Life: Measuring the Benefits of Culture and Sport: Annex 1*, Edinburgh: Scottish Executive.
- Bentham J (1996 [1789]) *An Introduction to the Principles of Morals and Legislation*, Oxford: Clarendon Press.
- Bjørnskov C (2007) The multiple facets of social capital. *European Journal of Political Economy* 22: 22–40.
- Blackorby C and Donaldson D (1990) A review article: the case against the use of the sum of compensating variations in cost-benefit analysis. *Canadian Journal of Economics* 23: 471–494.
- Blanchflower DG and Oswald AJ (1998) What makes an entrepreneur? *Journal of Labor Economics* 16: 26–60.
- Blanchflower DG and Oswald AJ (2005) Happiness and the human development index: the paradox of Australia. *Australian Economic Review* 38: 307–318.
- Blanchflower DG and Oswald AJ (2008) Hypertension and happiness across nations. *Journal of Health Economics* 27: 218–233.
- Bodin M and Hartig T (2003) Does the outdoor environment matter for psychological restoration gained through running? *Psychology of Sport and Exercise* 4: 141–153.
- Brickman P, Coates D and Janoff-Bulman R (1978) Lottery winners and accident victims: is happiness relative? *Journal of Personality and Social Psychology* 36: 917–927.
- Cantril H (1965) *The Pattern of Human Concerns*, New Brunswick, NJ: Rutgers University Press.
- Carp FM and Carp A (1982) The ideal residential area. *Research on Aging* 4: 411–439.
- Carson RT and Hanemann WM (2005) Contingent valuation. In: Mäler K-G and Vincent JR (eds) *Handbook of Environmental Economics*, vol. 2. Amsterdam: Elsevier, 821–936.
- Carstensen LL and Cone J (1983) Social desirability and the measurement of well-being in elderly persons. *Journal of Gerontology* 38: 713–715.
- Clark AE, Diener E, Georgellis Y and Lucas RE (2008) Lags and leads in life satisfaction: a test of the baseline hypothesis. *Economic Journal* 118: F222–F243.
- Clark AE, Frijters P and Shields MA (2008) Relative income, happiness, and utility: an explanation for the Easterlin paradox and other puzzles. *Journal of Economic Literature* 46: 95–144.
- Clark AE and Oswald AJ (1994) Unhappiness and unemployment. *Economic Journal* 104: 648–659.

- Clark AE and Oswald AJ (2002) A simple statistical method for measuring how life events affect happiness. *International Journal of Epidemiology* 31: 1139–1144.
- Cohen S, Doyle WJ, Turner RB, Alper CM and Skoner DP (2003) Emotional style and susceptibility to the common cold. *Psychosomatic Medicine* 65: 652–657.
- Cohen-Cole E and Fletcher JM (2008) Is obesity contagious? Social networks vs. environmental factors in the obesity epidemic. *Journal of Health Economics* 27: 1382–1387.
- Crisp R (2008) Well-being. In: Zalta EN (ed.) *The Stanford Encyclopedia of Philosophy*. Available at: <http://plato.stanford.edu/archives/win2008/entries/well-being>.
- Csikszentmihalyi M and Hunter J (2003) Happiness in everyday life: the uses of experience sampling. *Journal of Happiness Studies* 4: 185–199.
- Cushman G, Veal AJ and Zuzanek J (2005) *Free Time and Leisure Participation*, Wallingford: CABI Publishing.
- Daly MJ and Wilson DJ (2009) Happiness, unhappiness, and suicide: an empirical assessment. *Journal of the European Economic Association* 7: 539–549.
- Danner DD, Snowdon DA and Friesen WV (2001) Positive emotions in early life and longevity: findings from the nun study. *Journal of Personality and Social Psychology* 80: 804–13.
- Davidson RJ (2004) Well-being and affective style: neural substrates and bio-behavioural correlates. *Philosophical Transactions of the Royal Society of London Series B: Biological Sciences* 359: 1395–1411.
- Department for Communities and Local Government (2000) *Power to Promote or Improve Economic, Social or Environmental Well-being*, London: Department for Communities and Local Government.
- Department for Communities and Local Government (2007) *The New Performance Framework for Local Authorities & Local Authority Partnerships*, London: Department for Communities and Local Government.
- Department for Communities and Local Government (2008a) *Practical Use of the Well-being Power*, London: Department for Communities and Local Government.
- Department for Communities and Local Government (2008b) *Evaluation of the Take-up and Use of the Well-being Power: Research Summary*, London: Department for Communities and Local Government.
- Diener E (1984) Subjective well-being. *Psychological Bulletin* 95: 542–575.
- Diener E, Emmons RA, Larson RJ and Griffin S (1985) The satisfaction with life scale. *Journal of Personality Assessment* 49: 71–75.
- Diener E and Lucas RE (1999) Personality and subjective well-being. In: Kahneman D, Diener E and Schwarz N (eds) *Well-being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation, 213–229.
- Diener E and Suh EM (1997) Measuring quality of life: economic, social, and subjective indicators. *Social Indicators Research* 40: 189–216.
- Diener E, Suh EM, Lucas RE and Smith HL (1999) Subjective well-being: three decades of progress. *Psychological Review* 125: 276–302.
- Di Tella R and MacCulloch R (2006) Some uses of happiness data in economics. *Journal of Economic Perspectives* 20(1): 25–46.



Dolan P and Metcalfe R (2008) Comparing willingness-to-pay and subjective well-being in the context of non-market goods. CEP Discussion Paper No. 890.

Dolan P and Metcalfe R (2010) Oops...I did it again: repeated focusing effects in reports of happiness. *Journal of Economic Psychology* 31: 732–737.

Dolan P and Peasgood T (2008) Measuring well-being for public policy: preferences or experiences? *Journal of Legal Studies* 37: S5–S31.

Dolan P, Peasgood T, Dixon A, Knight M, Phillips D, Tsuchiya A and White MP (2006) *Research on the Relationship between Well-being and Sustainable Development*, London: Department for Environment, Food and Rural Affairs.

Dolan P, Peasgood T and White MP (2006) *Review of Research on the Influences on Personal Well-being and Application to Policy Making*, London: Department for Environment, Food and Rural Affairs.

Dolan P, Peasgood T and White MP (2008) Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology* 29: 94–122.

Dolan P and White MP (2007) How can measures of subjective well-being be used to inform public policy? *Perspectives on Psychological Science* 2: 71–85.

Dorling D (2010) New Labour and inequality: Thatcherism continued? *Local Economy* 25: 397–413.

Easterlin RA (1974) Does economic growth improve the human lot? Some empirical evidence. In: David PA and Weber MW (eds) *Nations and Households in Economic Growth. Essays in Honor of Moses Abramovitz*. New York: Academic Press, 89–125.

Easterlin RA (1995) Will raising the incomes of all increase the happiness of all? *Journal of Economic Behavior and Organization* 27: 35–48.

Easterlin RA (2001) Income and happiness: towards a unified theory. *Economic Journal* 111: 465–484.

Easterlin RA and Sawangfa O (2007) Happiness and domain satisfaction: theory and evidence. Discussion Paper 2584, IZA, University of Bonn.

Ebrecht M Hextall J, Kirtley LG, Taylor A, Dyson M and Weinman J (2004) Perceived stress and cortisol levels predict speed of wound healing in healthy male adults. *Psychoneuroendocrinology* 29: 798–809.

Fernandez-Dols JM and Ruiz-Belda MA (1995) Are smiles a sign of subjective well-being? Gold medal winner at the Olympic Games. *Journal of Personality and Social Psychology* 69: 1113–1119.

Ferrer-i-Carbonell A and Frijters P (2004) How important is methodology for the estimates of the determinants of happiness? *Economic Journal* 114: 641–659.

Ferrer-i-Carbonell A and Gowdy JM (2007) Environmental degradation and happiness. *Ecological Economics* 60: 509–516.

Ferrie J (2001) Is job insecurity harmful to health? *Journal of the Royal Society of Medicine* 94: 71–76.

Fowler JH and Christakis NA (2008) Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study *British Medical Journal* 337: a2338.

- Frederick S and Loewenstein G (1999) Hedonic adaptation. In: Kahneman D and Tversky A (eds) *Choices, Values and Frames*. Cambridge, MA: Cambridge University Press, 302–329.
- Frey BS and Stutzer A (2002a) *Happiness and Economics*, Princeton, NJ: Princeton University Press.
- Frey BS and Stutzer A (2002b) What can economists learn from happiness research? *Journal of Economic Literature* 40: 402–435.
- Frey BS and Stutzer A (2008) Should national happiness be maximized? In: Dutt A and Radcliff B (eds), *Happiness, Economics and Politics*. Cheltenham, England: Edward Elgar, 301–323.
- Green F (2004) Work intensification, discretion and the decline in well-being at work. *Eastern Economic Journal* 30: 615–625.
- Groot W (2000) Adaptation and scale of reference bias in self-assessments of quality of life. *Journal of Health Economics* 19: 403–420.
- Harsanyi JC (1977) Morality and the theory of rational behaviour. *Social Research* 44: 623–656.
- Harsanyi JC (1996) Utilities, preferences, and substantive goods. *Social Choice and Welfare* 14: 129–145.
- Helliwell JF (2006) Well-being, social capital and public policy: what’s new? *Economic Journal* 116: C34–C45.
- Helliwell JF and Putnam RD (2004) The social context of well-being. *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 359: 1435–1446.
- Hewes S, Buonfi A, Ali R and Mulgan G (2010) *Cohesive Communities – The Benefits of Effective Partnership Working between Local Government and the Voluntary and Community Sector*, London: Improvement and Development Agency.
- James O (2009) Evaluating the expectations disconfirmation and expectations anchoring approaches to citizen satisfaction with local public services. *Journal of Public Administration Research and Theory* 19: 107–123.
- Kahneman D (2000) Experienced utility and objective happiness: a moment based approach. In: Kahneman D and Tversky A (eds) *Choices, Values and Frames*. Cambridge, MA: Cambridge University Press, 673–692.
- Kahneman D and Krueger AB (2006) Developments in the measurement of subjective well-being. *Journal of Economic Perspectives* 20: 3–24.
- Kahneman D, Krueger AB, Schkade DA, Schwarz N and Stone AA (2004) A survey method for characterizing daily life experience: the day reconstruction method. *Science* 306: 1776–1780.
- Kahneman D and Sugden R (2005) Experienced utility as a standard of policy evaluation. *Environmental and Resource Economics* 32: 161–181.
- Kahneman D, Wakker PP and Sarin R (1997) Back to Bentham? Explorations of experienced utility. *Quarterly Journal of Economics* 112: 375–405.
- Kammann R and Flett R (1983) Affectometer 2: a scale to measure current level of general happiness. *Australian Journal of Psychology* 82: 1007–1022.
- Kaptein A, Smith JP and Van Soest A (2010) Life satisfaction. In: Diener E, Kahneman D and Helliwell J (eds) *International Differences in Wellbeing*. Oxford: Oxford University Press, 70–104.

- Koivumaa-Honkanen H, Honkanen R, Viinamäki H, Heikkilä JK and Koskenvuo M (2001) Life satisfaction and suicide: a 20-year follow-up study. *American Journal of Psychiatry* 158: 433–439.
- Layard R, Mayraz G and Nickell SJ (2008) The marginal utility of income. *Journal of Public Economics* 92: 1846–1857.
- Lepper H (1998) Use of other-reports to validate subjective well-being measures. *Social Indicators Research* 44: 367–379.
- Luechinger S (2009) Valuing air quality using the life satisfaction approach. *Economic Journal* 119: 482–515.
- Luttmer EFP (2005) Neighbors as negatives: relative earnings and well-being. *Quarterly Journal of Economics* 120: 963–1002.
- Marmot M, Allen J, Goldblatt P, Boyce T, McNeish D, Grady M and Geddes I (2010) *Fair Society, Healthy Lives: Strategic Review of Health Inequalities in England Post-2010*, London: The Marmot Review.
- Maslow AH (1943) A theory of human motivation. *Psychological Review* 50: 370–96.
- Motl RW, Birbaum AS, Kubik MY and Dishman RK (2004) Naturally occurring changes in physical activity are inversely related to depressive symptoms during early adolescence. *Psychosomatic Medicine* 66: 336–342.
- Nussbaum M (2000) *Women and Human Development: The Capabilities Approach*, Cambridge, England: Cambridge University Press.
- Osberg L and Sharpe A (2002) An index of economic well-being for selected OECD countries. *Review of Income and Wealth* 48: 291–316.
- Oswald AJ (1997) Happiness and economic performance. *Economic Journal* 107: 1815–1831.
- Oswald AJ and Powdthavee N (2008) Does happiness adapt? A longitudinal study of disability with implications for economists and judges. *Journal of Public Economics* 92: 1061–1077.
- Oswald AJ, Proto E and Sgroi D (2008) Happiness and productivity. Warwick Economic Research Papers 882, University of Warwick.
- Parkes A, Kearns A and Atkinson R (2002) What makes people dissatisfied with their neighbourhoods? *Urban Studies* 39: 2413–2438.
- Penedo FJ and Dahn JR (2005) Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry* 18: 189–193.
- Peterson C, Park N and Seligman ME (2005) Orientations to happiness and life satisfaction: the full life versus the empty life. *Journal of Happiness Studies* 6: 25–41.
- Powdthavee N (2008) Putting a price tag on friends, relatives, and neighbours: using surveys of life satisfaction to value social relationships. *Journal of Socio-Economics* 37: 1459–1480.
- Powdthavee N and Van Den Berg B (2011) Putting different price tags on the same health condition: re-evaluating the well-being valuation approach. *Journal of Health Economics* 30: 1032–1043.

- Pretty J, Peacock J, Sellens M and Griffin M (2005) The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research* 15: 319–337.
- Putnam R (2000) *Bowling Alone: The Collapse and Revival of American Community*, New York: Simon and Schuster.
- Rablen MD (2008) Relativity, rank and the utility of income. *Economic Journal* 118: 801–821.
- Rawls J (1971) *A Theory of Justice*, Cambridge, MA: Harvard University Press.
- Redelmeier D and Kahneman D (1996) Patient's memories of painful medical treatments: real time and retrospective evaluations of two minimally invasive procedures. *Pain* 116: 3–8.
- Rehdanz K and Maddison D (2008) Local environmental quality and life-satisfaction in Germany. *Ecological Economics* 64: 787–797.
- Ross C and Hayes D (1988) Exercise and psychological well-being in the community. *American Journal of Epidemiology* 127: 762–771.
- Ryan RM and Deci EL (2000) Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55: 68–78.
- Ryff CD (1989) Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology* 57: 1069–1081.
- Sandvik E, Diener E and Seidlitz L (1993) Subjective well-being: the convergence and stability of self-report and non-self-report measures. *Journal of Personality* 61: 317–342.
- Schimmack U and Oishi S (2005) Chronically accessible versus temporarily accessible sources of life satisfaction judgments. *Journal of Personality and Social Psychology* 89: 395–406.
- Schkade DA and Kahneman D (1998) Does living in California make people happy? A focusing illusion in judgments of life satisfaction. *Psychological Science* 9: 340–346.
- Schwarz N and Clore GL (1983) Moods, misattribution, and judgements of well-being: informative and directive functions of affective states. *Journal of Personality and Social Psychology* 45: 513–523.
- Schwarz N and Strack F (1999) Reports of subjective well-being: judgmental processes and their methodological implications. In: Kahneman D, Diener E and Schwarz N (eds) *Well-being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation, 61–84.
- Sen A (1999) *Development as Freedom*, Oxford: Oxford University Press.
- Shields M and Wheatley Price S (2005) Exploring the economic and social determinants of psychological well-being and perceived social support in England. *Journal of the Royal Statistical Society: Series A* 168: 513–537.
- Shizgal P (1999) On the neural computation of utility: implications from studies of brain stimulation reward. In: Kahneman D, Diener E and Schwarz N (eds) *Well-being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation, 500–524.
- Sirgy MJ and Cornwell T (2002) How neighborhood features affect quality of life. *Social Indicators Research* 59: 79–114.
- Snowdon D (2001) *Aging with Grace: What the Nun Study Teaches us about Leading Longer, Healthier, and More Meaningful Lives*, New York: Bantam Books.

Stephens T (1988) Physical activity and mental health in the United States and Canada: evidence from four population surveys. *Preventative Medicine* 17: 35–47.

Stiglitz J, Sen A and Fitoussi JP (2009) *Report by the Commission on the Measurement of Economic Performance and Social Progress*, Paris: Commission on the Measurement of Economic Performance and Social Progress.

Strack F, Martin LL and Schwarz N (1988) Priming and communication: the social determinants of information use in judgements of life satisfaction. *European Journal of Social Psychology* 18: 429–442.

Stutzer A and Frey BS (2008) Stress that doesn't pay: the commuting paradox. *Scandinavian Journal of Economics* 110: 339–366.

Tinkler L and Hicks S (2011) *Measuring subjective well-being*, Newport: Office for National Statistics.

Van Praag BMS and Baarsma BE (2005) Using happiness surveys to value intangibles: the case of airport noise. *Economic Journal* 115: 224–246.

Van Praag BMS, Frijters P and Ferrer-i-Carbonell A (2003) The anatomy of subjective wellbeing. *Journal of Economic Behavior and Organization* 51: 29–49.

Watson D, Clark LA and Tellegen A (1988) Development and validation of brief measures of positive and negative affect: the PANAS scale. *Journal of Personality and Social Psychology* 54: 1063–1070.

Welsch H (2006) Environment and happiness: valuation of air pollution using life satisfaction data. *Ecological Economics* 58: 801–813.

Wilkinson R and Pickett K (2009) *The Spirit Level: Why More Equal Societies Almost Always Do Better*. London: Allen Lane.

Wilson TD and Gilbert D (2003) Affective forecasting. *Advances in Experimental Social Psychology* 35: 345–411.

World Commission on Environment and Development (1987) *Our Common Future*, Oxford: Oxford University Press.