

The Science of Happiness for Policymakers:  
An Overview

Dan Weijers<sup>1</sup> and Aaron Jarden<sup>2</sup>

<sup>1</sup>Victoria University of Wellington, dan.weijers@vuw.ac.nz, Philosophy Programme, PO Box 600, Wellington 6140, New Zealand.

<sup>2</sup>Open Polytechnic of New Zealand and Auckland University of Technology

**Abstract**

Given the limitations of traditional economic indicators, several national governments and multinational organisations are investigating new measures of progress and well-being to inform policymaking, with some researchers (e.g., Layard, 2005; Diener & Seligman, 2004; Marks & Shah, 2004; Frey & Stutzer, 2002) calling for scientific measures of happiness to be among those investigated (Diener, Lucas, Schimmack, & Helliwell, 2009; Dolan & White, 2007; Stiglitz, Sen, & Fitoussi, 2009). In this article, we review the literature relevant to the questions of whether and how the science of happiness should be used to inform policymaking. First, we provide a brief overview of the history, methods, and rationale behind happiness science and its use in public policy, and identify the most promising scientific methods for measuring happiness. Following this, several criticisms of these measures are discussed. The main criticisms addressed here include: that survey measures of happiness are too insensitive, that we cannot know what measures of happiness are measuring, and that the wrong kind of happiness is being measured. Lastly we provide recommendations for the role that suitably-improved measures of happiness could play in policymaking, and what steps would need to be undertaken to suitably improve these measures. We conclude that it would be appropriate for governments to measure happiness, and for civil servants to use those data to inform policymaking. However, much complex interdisciplinary and international research is required before it would be appropriate for the science for happiness to play such a role in policymaking.

*Keywords:* well-being, wellbeing, happiness, subjective well-being, public policy, science of happiness

### **Introduction**

Given the limitations of traditional economic indicators, several national governments and multinational organisations are investigating new measures of progress and well-being to inform policymaking (Diener, 2009a; Michalos, 2011; Stiglitz, Sen, & Fitoussi, 2009), with some researchers (e.g., Layard, 2005; Diener & Seligman, 2004; Marks & Shah, 2004; Frey & Stutzer, 2002) calling for scientific measures of happiness to be among those investigated (Diener, Lucas, Schimmack, & Helliwell, 2009; Dolan & White, 2007). These traditional economic measures of per capita production, income, and wealth do not take all relevant production, income, and wealth into account, and fail to capture the value of our relationships, health, and happiness (Stiglitz, Sen, & Fitoussi, 2009)—all of which are typically viewed as important for well-being (Helliwell, 2006). Many alternate measures of well-being have been developed over the years to address this problem, and governments have slowly incorporated some of them into the policymaking process at various stages (see Diener, Lucas, Schimmack, & Helliwell, 2009).

Over the last few years, the debate about whether and how happiness should be measured and used as an indicator of progress, and to inform policymaking, has intensified (Bok, 2010; Dolan & White, 2007). This article briefly reviews the history of this debate, some of the current challenges of using measures of happiness for policymaking, and some of the possibilities for meeting these challenges.

First, we describe how a point has been reached at which measures of happiness are being seriously considered by policymakers. We outline the most promising methods for measuring happiness. Following this, several important criticisms of these measures are discussed and some are argued to be challenges that need addressing before measures of happiness can usefully be employed by policymakers. The main criticisms addressed here include that survey measures of happiness are too insensitive, that we cannot know what measures of happiness are measuring, and that the wrong kind of happiness is being measured. Lastly we provide recommendations for the role that suitably-improved measures of happiness could play in policymaking, and what steps need to be undertaken to suitably improve these measures. We conclude that it would be appropriate for governments to measure happiness, and for civil servants to use those data to inform policymaking. However, much complex interdisciplinary and international research is required before it would be appropriate for the science for happiness to play such a role in policymaking.

### **Why Measure Happiness?**

The limits of Gross Domestic Product (GDP) and Gross National Product (GNP) have been recognised by economists, politicians, and other social scientists for a long time (Diener et al., 2009; Michalos, 2011). In particular, GDP and GNP have been criticised as measures of progress because of their myopic focus on production. These measures were never intended to be complete measures of progress, rather they were intended to reveal the rate at which the economy was growing or shrinking in a country (England, 1998). Nonetheless, the pursuit of economic growth has dominated the agendas of nearly all national governments, and as a result, GDP has become the main indicator of progress by default (England, 1998). Some of the problems with GDP and GNP were emotively elucidated by Robert F. Kennedy in his speech at the University of Kansas in 1968:

But even if we act to erase material poverty, there is another greater task; it is to confront the poverty of satisfaction—purpose and dignity—that afflicts us all. Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things. Our Gross National Product, now, is over \$800 billion dollars a year, but that Gross National Product—if we judge the United States of America by that—that Gross National Product counts air pollution and cigarette advertising and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts... the television programs, which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country; it measures everything, in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans. (Kennedy, 1968)

In response to these and other shortcomings of GDP and GNP, economists, national statisticians, and interested non-governmental organisations began to investigate and measure other aspects related to progress, such as human, social, and environmental capital (Carneiro, & Heckman, 2003; Freeman III, Haveman, &

Kneese, 1973; Woolcock & Narayan, 2000). In addition to broadening and refining the existing range of economic measures, these initiatives led to the collection of data related to individual well-being, quality of life, and eventually happiness (Michalos, 2011; Stiglitz, Sen, & Fitoussi, 2009). For many years now, and particularly over the last ten years, academics from several disciplines and various countries, and some civil servants, have been increasingly pushing for these new measures of well-being to play more important roles in policymaking (e.g., Bok, 2010; Layard, 2005; New Zealand Treasury, 2011; Stoll, Michaelson, & Seaford, 2012). Over the last few years, politicians have also become engaged. For example, in 2008, French President Nicolas Sarkozy chartered the ‘Commission on the Measurement of Economic Performance and Social Progress’. The Commission, headed by Nobel-winning economist Joseph Stiglitz, advised that their report:

...is addressed, first of all, to political leaders. In this time of crises, when new political narratives are necessary to identify where our societies should go, the report advocates a shift of emphasis from a “production-oriented” measurement system to one focused on the well-being of current and future generations, i.e. toward broader measures of social progress (Stiglitz, Sen, & Fitoussi, 2009, p. 10).

The Commission mentions measures of subjective well-being briefly, but positively, encouraging national statistical offices to “incorporate questions to capture people’s life evaluations, hedonic experiences and priorities in their own surveys” because “[m]easures of subjective well-being provide key information about people’s quality of life” (Stiglitz, Sen, & Fitoussi, 2009, p. 58). Shortly afterward the British Prime Minister, David Cameron, announced the investigation of, and subsequent measurement of, well-being (including subjective well-being) by the British government:

[F]rom April next year, we’ll start measuring our progress as a country, not just by how our economy is growing, but by how our lives are improving; not just by our standard of living, but by our quality of life (Cameron, 2010).

Although nowhere in his speech does Cameron mention subjective well-being, the questions, his responses, and the related media coverage of the speech reveal that the most important part of Cameron’s initiative—often

referred to as his ‘happiness agenda’ (e.g., Stoker, 2013)—is his request of the United Kingdom’s Office of National Statistics to start measuring subjective well-being. The initial policy document released by the United Kingdom’s Office of National Statistics also corroborates this (Self, Thomas, & Randall, 2012).

Demonstrating that civil servants can also take the lead on incorporating new measures of well-being into policymaking, the Treasuries of Australia and New Zealand have independently developed a Wellbeing Framework and a Living Standards Framework, respectively (Australian Treasury, 2006; New Zealand Treasury, 2011). Endowed with the vision of encouraging “higher living standards for New Zealanders” since its inception, the New Zealand Treasury produced the Living Standards Framework in 2011 to provide guidance on what improving living standards actually amounts to (New Zealand Treasury, 2011). The Living Standards Framework outlines the importance of human, social, and natural capital in addition to traditional economic and physical capital for increasing living standards. The Living Standards Framework also sets out the role of subjective measures of well-being as providing a “cross-check of what is important to individuals” (New Zealand Treasury, 2011, p. 1).

However, it may yet transpire that supranational organisations, such as the United Nations (UN) and the Organisation for Economic Cooperation and Development (OECD), may end up leading the way on promoting the use of broader measures of well-being in policymaking. For example, in April 2012, the UN General Assembly held a high-level meeting on ‘Happiness and Wellbeing: Defining a New Economic Paradigm’ in New York. The agenda for this meeting included the use of measures subjective well-being (Royal Government of Bhutan, 2012). Indeed, the World Happiness Report, which was commissioned for the meeting, contained a chapter on ‘The State of World Happiness’ that relies exclusively on research using measures of subjective well-being because “they capture best how people rate the quality of their lives” (Helliwell & Wang, 2012, p.11).

The OECD has identified measures of subjective well-being as essential for a complete understanding of well-being:

For over fifty years, the [OECD] has helped governments design better policies for better lives for their citizens... Ever since the OECD started out in 1961, GDP has been the main factor by which it has measured and understood economic and social progress. But it has failed to capture many of the factors that influence people's lives, such as security, leisure, income distribution and a clean environment... The OECD Better Life Initiative allows a better understanding of what drives the well-being of people and nations and what needs to be done

to achieve greater progress for all... [T]he OECD has identified 11 dimensions as being essential to well-being, [including] overall satisfaction with life... (OECD, 2013).

Richard Layard is one of the most prominent proponents of the use of measures of subjective well-being, recommending that “quality of life, as people experience it, ought to be a key measure of progress and a central objective for any government” (Layard, 2011, no page). Similar, but slightly less extreme positions to Layard’s, are held by Derek Bok (2010), Ed Diener (2011), and Bruno Frey (2008). Layard has argued that measures of subjective well-being should be the main yardstick for public policy because happiness is the most important goal in life for most of us (Layard, 2005). Happiness, Layard claims, is “what people want for their children and for their fellow citizens” and thereby concludes that “the greatest happiness of all” deserves to be the ultimate goal of governments and policymakers (Layard, 2005, pp. 124–125). Layard understands happiness as meaning “feeling good—enjoying life and wanting the feeling to be maintained” (2005, p. 12) and believes that the emerging field of happiness science has come far enough to accurately measure this kind of happiness using subjective survey questions. Thus according to Layard, we should be using data from subjective survey measures of happiness to inform policymaking. However, the use of subjective measures of happiness as the only or ultimate criterion to assess specific policies or progress in general has been criticised by philosophers and economists on many grounds, including most of the traditional philosophical objections to hedonism about wellbeing (e.g., Diener & Scollon, 2003; Hausman, 2010; Frey & Stutzer, 2007).

For example, many philosophers have argued that considering a hypothetical scenario about an ‘experience machine’ clearly demonstrates that some things in life are more important than experiencing happiness (Weijers, 2011a; 2013a; 2013b; Weijers & Schouten, forthcoming). Imagine a flawless machine, Robert Nozick (1974; 1989) asks his readers, that could provide you with a life full of happiness in such a way that you never realised that you were living a fake life. Now imagine that you had no responsibilities to others in your real-world life. Would you choose to permanently connect to such a machine, foregoing your real life for a life of machine-generated happiness? Nozick (1974; 1989) argues that our reluctance to connect to such a machine for the rest of our lives reveals that more than the experience of happiness matters to us; that there is something about a life lived in close contact with reality, perhaps really doing or being certain things, that is more valuable to us than happiness. Nevertheless, empirical research on people’s judgments about such hypothetical scenarios also reveals that many people do value happiness more than anything else (Weijers, 2013a), and it is commonly

assumed in Western cultures that happiness is at least one of the most important things in life (Joshano, 2013; Joshano & Weijers, forthcoming).

However, several scholars have argued that happiness is understood differently by different individuals and in different cultures (Joshano, 2013; Mathews, 2012; Thin, 2012), and also that happiness is not always viewed as positive (Joshano & Weijers, forthcoming). In a review of where and why different people place negative value on happiness, Joshano and Weijers (forthcoming) argue that the kind of happiness that is often thought of as universally good by happiness researchers like Layard—a preponderance of joyous and pleasant over sombre emotions—is often thought to have bad consequences or denote character flaws in non-Western cultures. In Iran, for example, unhappy people are ascribed positive character traits such as being deep and spiritual, happy people (in the sense mentioned above) are viewed as being shallow and distracted from God in a way that makes them morally deficient (Joshano & Weijers, forthcoming).

So, while several researchers have concerns about happiness (as usually defined by happiness researchers) being the supreme aim of public policy and even *an* aim of policy in some cultures, happiness as *an* aim of public policy in Western cultures seems to be better supported (e.g., Bok, 2010; Diener, 2006; 2011; Diener & Scollon, 2003; Frey, 2008; Frey & Stutzer, 2007; Seligman, 2011). Furthermore, if the citizenry of a democratic state demand that its government includes happiness as one of its overarching goals, then there is reason for policymakers to investigate measuring happiness and using the resulting data as one of a set of guides for public policy.

David Cameron's pronouncement that subjective well-being will be measured in the United Kingdom has been met with mixed comments from critics (Cohen 2011; Fitzpatrick, 2011; Vaillant, 2011), but the wider public seem to support the notion that happiness should be measured and that the associated results should inform policymaking. For example, in a 2005 BBC opinion poll, 1001 participants were asked whether the government's main objective should be the "greatest happiness" or the "greatest wealth" with 81% reporting that happiness should be the main goal (Easton, 2006, np). This result resembles a poll taken on *The Economist's* website during a debate between Richard Layard and Paul Ormerod, in which the motion "new measures of economic and social progress are needed for the 21st-century economy" (using happiness science to inform policymaking was the focus of the debate) received 83% of the support from the online audience (of unspecified size). If these results are representative of popular opinion, then, in democracies at least, the practicality of measuring happiness for policymaking should be investigated. Furthermore, since happiness is usually

understood as being a subjective state (Layard, 2005; Lyubomirsky, 2008; Veenhoven, 2002), the practicality and processes of measuring subjective well-being for policymaking should be investigated.

### **The Basics of Measuring Subjective Well-Being**

Whether the use of measures of subjective well-being for policymaking should be pursued depends not only on how important happiness is to people, but also on whether happiness can be efficiently and accurately measured. Of all the new methods for measuring happiness, only survey questions are currently practical on scales large enough to be useful for public policy. For example, survey questions asking for respondents' judgments about how happy or satisfied they are with their life can be quickly and cheaply disseminated if online survey technology is used. Furthermore, the use of online surveys enables respondents' answers to be formatted into usable data at the touch of a button. In contrast, collecting happiness data with behavioural measures, such as expert observations, tracking devices, or neuroimaging techniques, is likely to be prohibitively expensive. It is also unclear if any of these more objective measures are better at capturing how happy a person is compared to simply asking them (Layard, 2005; Lyubomirsky, 2008; Veenhoven, 2002). Indeed, the success of neuroimaging measures of happiness (discussed in more detail below) is sometimes assessed by the size of their respective correlations with the participants' responses to subjective well-being survey questions (e.g., Urry, Nitschke, Dolski, Jackson, Dalton, Mueller, Rosenkranz, Ryff, Singer, & Davidson, 2004).

Subjective measures of well-being can be global or domain-specific. Global measures aim to assess respondents' judgments of their lives as a whole, while domain-specific measures target aspects of respondents' lives, such as their work life, family life, health, or finances. Although domain-specific measures have their uses (Huppert, Marks, Clark, Siegrist, Stutzer, Vittersø, & Wahrendorf, 2009), the focus in this article will be on global measures because they provide a better approximation of the term 'happiness' as it is normally understood.

There are a wide range of global subjective well-being questions (Diener, 2009a), but most are subtle variants of general questions about happiness or satisfaction with life. For example, the United States' General Social Survey asks: "Taken all together, how would you say things are these days? Would you say that you are very happy, pretty happy, or not too happy?" (Kahneman & Krueger, 2006, p. 6). The World Values Survey asks: "All things considered, how satisfied are you with your life as a whole these days?", and uses a response scale ranging from "1 (not at all satisfied)" to "10 (very satisfied)" (Inglehart, Foa, Peterson, & Welzel, 2008). The subtle variations on these questions usually amount to changing the number of available points on the

response scale, or slightly adjusting the wording of the question. For example, the World Values Survey also asks the following question about happiness: “Taking all things together, would you say you are... Very happy... Rather happy... Not very happy... Not at all happy” using a 4-point response scale.

Global subjective well-being questions elicit responses that are biased by contextual factors, the specific wording of questions, the order and type of preceding questions, and respondents’ current mood (Diener, 2009b; Kahneman & Krueger, 2006; OECD, 2013; Schwarz & Strack, 1999). For example, experiments have shown that contextual factors, such as the weather (Schwarz & Clore, 1983) or unexpectedly finding a dime (Schwarz, 1987), significantly affect how satisfied participants reported being with their lives. Experiments on the variability of self-reported satisfaction with life within individuals have demonstrated that people’s reported satisfaction with life as a whole changes dramatically over a period of a few weeks (OECD, 2013). Kahneman and Krueger (2006), for example, found that 218 women who were interviewed twice over two weeks reported life satisfaction scores that correlated only moderately with each other ( $r = .59$ ). Such large differences in how many of these women reported judging their life as whole imply that current mood and recent events (including answering questions about themselves) may have affected their judgments considerably, that life satisfaction questions tend to elicit fairly inaccurate answers, or both.

However, large representative samples and careful psychometric survey creation can avoid most of these problems. Indeed, many of these potential biases can be avoided because they are random biases, which tend to affect different people at different times. Therefore, by conducting surveys on large representative samples, the impact of random bias tends to cancel itself out (the law of averages) and is thereby considerably reduced. In this way, sampling can eliminate the potential bias associated with personal variations in mood, and localised variation in important events (e.g., sports teams winning) and the weather. If variability caused by the weather is expected to be a problem, it can also be reduced by acknowledging the weather before completing the survey (Schwarz & Clore, 1983). The effects of recent events and participants’ current mood can also be reduced by using a battery of questions about satisfaction with life, such as the Satisfaction with Life Scale (Diener, Emmons, Larsen, Griffin, 1985), instead of just one question (Lucas, Diener, & Suh, 1996; Schimmack & Oishi, 2005). In order to prevent the small but robust effects that specific questions have on subsequent responses to the more global questions, researchers usually put global questions first on their surveys (Schimmack & Oishi, 2005). Finally, the different results that different wordings of subjective well-being questions produce is a complex issue that is discussed later in this article (see also Diener, 2009a; OECD, 2013).

### **Problems for Using Measures of Subjective Well-Being to Inform Policymaking**

Many criticisms have been levelled at the use of happiness science to inform policy. Three of the most pertinent criticisms will be discussed here: that survey measures of happiness are too insensitive to be useful, that we cannot know what measures of happiness are really measuring, and that the wrong kind of happiness is being measured.

#### **Are happiness scales insensitive?**

Johns and Ormerod (2008) claim that time series happiness data are insensitive. A statistical measure of a dependant phenomenon can be said to be insensitive if its results do not demonstrate statistically significant changes in response to changes of input variables that there is good reason to believe should effect a statistically significant change in the dependant phenomenon. Put simply, if time series happiness data are insensitive, then the happiness scores will not change enough in response to environmental changes for us to be 95% confident that the small changes in the happiness scores are not simply a product of chance. While insensitivity is a problem for most measures of happiness, it is not an insurmountable one. The argument for the insensitivity of time series happiness data Johns and Ormerod put forward is based on a discussion of one measure of happiness with a 3-point response scale. This particular selection is somewhat misleading because most recent and contemporary happiness questions have at least four-point response scales, such as the World Values Survey question mentioned above. Moreover, as the OECD report (OECD, 2013) indicates, the trend is for larger and more discriminant response scales (e.g., the OECD recommend natioanl statistical offices use 0 to 10 scales, with 0 representing an absence of the construct measured rather than the opposite of the construct – allowing for even further discrimination of variables). Indeed, many of the subjective well-being scales currently in use have ten or eleven options. See, for example, the life satisfaction question from the World Values Survey (question V22) or the well-being questions used in the Gallup World Poll (Gallup Inc., 2008).

Put in context, it is easy to see why 3-point response scale might make a measure of happiness insensitive. A 10% increase in average national reported happiness would require 20% (net: see Turton, 2009) of the respondents to respond in the next higher up category (e.g., move from ‘unhappy’ to ‘somewhat happy’, or from ‘somewhat happy’ to ‘very happy’). Johns and Ormerod (2008) consider such an increase “very difficult” to imagine occurring over “a few years”. This is understandable; a 10% increase in reported happiness over a few years will be unusual no matter what measure of happiness is used. Consider that, to achieve a 10% increase in

reported happiness on a 10-point scale, 90% (net) of respondents would need to report a higher category of happiness, or 22.5% (net) would have to report their happiness as four categories higher.

A further problem exists for 3- or 4-point response scales in that they are insensitive on the micro (individual person) level because a person would have to undergo a considerable change in their reported judgement of their life to move on the response scale. So the worry with 3- or 4-point response scales is that the big changes in judgments of happiness required to change the results on the micro level will make observable changes at the national level more unlikely than when a 10- or 11-point response scale is used (Cummins & Gullone, 2002). While this is undoubtedly true, a statistically significant 10% increase in average reported happiness (on 4-point scales) has occurred in some countries over just a few years, including Lithuania (1997–1999), Mexico (1996–2000), and Slovenia (1992–1995). Furthermore, and in Johns and Ormerod's home country of Great Britain, 10% increases in reported happiness have occurred over slightly longer periods of time (Ingleheart, Foa, Peterson, & Welzel, 2008; Turton, 2009).

While time-series happiness measures might be relatively insensitive, even happiness measures with 4-point response scales are sensitive enough to capture trends. Therefore, although worries about the insensitivity of happiness measures are not completely unfounded, they do not provide a good reason to avoid using time series happiness data to guide policy. Indeed, many time series happiness studies can be useful for policymaking in several ways (Frey, 2008; Diener, et al., 2009). For example, careful comparison of survey data from similar nations, or other groups, where policy change has occurred in some groups but not others, can help to evaluate the effects of policy change on reported happiness (Turton, 2009). This method works best when detailed and thorough datasets are available because they help to isolate the effects of the policy change from those of other factors that are known to affect reported happiness, such as income and health (Helliwell, 2006).

### **Do measures of happiness really measure happiness?**

There are currently a number of different methods that are claimed to be measures of well-being (Lopez & Snyder, 2003). These measures include brain scans (neuroimaging), daily reports of feelings, the opinions of participants' friends or colleagues, the opinion of an expert, the amount of time participants smile and, most commonly, survey questions (Lopez & Snyder, 2003; Weijers, 2010). Importantly, there is a range of survey questions about happiness and well-being, many of which are worded very differently; some ask about positive and negative feelings, satisfaction with life, whether you would change anything about your life, and, of course, happiness. The results of these diverse survey measures, collectively referred to as subjective well-being or

happiness measures, are what policymakers are considering using to guide their policy decisions. However, appropriate questions to ask include: are these surveys actually measuring happiness or well-being? And, is one person's happiness is the same as another's?

Kroll (2010), Layard (2003; 2005) and Bok (2010) all argue that we should have faith in answers to survey questions about well-being because they are significantly correlated with many other measures of well-being, both within and between large groups of people. Importantly, these researchers view the correlations found in the neuroimaging studies as adding considerable support to the idea that subjective measures of well-being are assessing something that is real and that we all experience. Neuroimaging studies usually monitor the levels of activity in certain brain areas in response to stimuli that researchers already know to have particular effects on participants. For example, participants might be shown pictures of cute or deformed babies while electrodes attached to their scalp provide a visual display of the changes in neural activity (Layard, 2005). On the support that neuroimaging offers to the objectivity of happiness, Layard states:

Sceptics may still question whether happiness is really an objective feeling that can be properly compared between people. To reassure doubters, we can turn to modern brain physiology [neuroimaging] with its sensational new insights into what is happening when a person feels happy or unhappy (2005, p. 17).

Indeed, the diverse measures of well-being mentioned above are nearly always statistically significantly correlated (Weijers, 2010), which is to say that we can be highly confident that someone who scores high on one of the measures will also tend to score high on the others (and vice versa). However, just because their results tend to be correlated does not entail that these different measures are actually evaluating well-being or happiness. One point that Kroll, Layard, and Bok overlook is that, although the majority of the correlations between neuroimaging and subjective well-being survey data are statistically significant, they are not large in size (Weijers, 2010; Weijers & Jarden, 2011). The important point here is that we can be highly confident that the different measures are assessing related but *different* phenomena, since small correlations imply measures of related phenomena and only large or very large correlations imply two measures of the same phenomena.

In the only comprehensive study of correlations between neuroimaging and measures of subjective well-being to date, Urry and colleagues (2004) compared several prominent subjective well-being measures with electroencephalogram data from 84 right-handed adults aged 57–60. Correlating highest with the neuroimaging

results were the scores for a measure of psychological flourishing; the Scales of Psychological Well-Being (Ryff, 1989). The correlation was highly significant ( $p < .01$ ) and moderate in size ( $r = .33$ ). Next was Diener and colleagues' (1985) Satisfaction with Life Scale, which was moderately correlated with the neuroimaging results ( $r = .30$ ) and was also highly significant ( $p < .01$ ). A smaller ( $r = .21$ ) and slightly less significant ( $p < .05$ ) correlation was also found with the positive affect component of Watson, Clark, and Tellegen's (1988) Positive and Negative Affect Schedule.

The significant, but relatively modest, correlations between the neuroimaging results and these measures of subjective well-being tell us two things. First, the neuroimaging results and these measures of subjective well-being are likely to be tracking phenomena that are related in some positive way; these correlations are positive and statistically significant. Second, we can be confident that the phenomena being tracked are distinct because the high statistical significance of the results increases confidence that the various measures are not measuring the same thing. If the size of the correlations were higher, for instance above  $r = .60$  ( $r = .60$  is the level above which behavioural scientists usually deem results to be 'highly related'; Cohen, 1988), and the statistical significance remained high, then we would expect to observe the phenomena measured by the different tests to covary more closely and, thereby, give the impression of being the same thing. Positive correlations of  $r = .33$  mean that we should expect an increase in the results of the neuroimaging measure to be usually accompanied by a relatively smaller increase of the subjective well-being measure. This is the kind of relationship expected from distinct, but positively related variables; not from two different measures of the same phenomenon.

Moreover, the cognitive scientists who carry out neuroimaging studies rarely claim to be testing happiness or well-being. More commonly they claim to be investigating the neural correlates of pleasure and pain, or approach and withdrawal behaviour, as is the case with the neuroimaging study that Layard discusses (Davidson, Ekman, Saron, Senulius, & Friesen, 1990; Layard, 2005). But even if experimental neuroimaging studies were carried out until a measure of neurological activity correlated highly and significantly with a subjective measure of happiness, it would be presumptuous to declare it the discovery of an objective measure of happiness. Rather, such a neurological measure should be understood as an objective measure of the propensity to report subjective happiness. Understood this way, it is less obvious how objective neuroimaging results are supposed to increase confidence that a measure of subjective well-being is accurately performing the task that it is purported to. A similar presentation of this issue appears in Weijers and Jarden (2011) and Feldman (2010).

Nevertheless, the confluence of the various correlations between measures of subjective well-being, aspects of bio-physical health, neuroimaging data, observers' reports, and behavioural analyses points toward there being something tangible to measure (Layard, 2010). That different measures of well-being measure different aspects of well-being is not necessarily a drawback. Frey and Stutzer (2002) also provide a summary of how measures of subjective well-being are reliable enough to provide useful economic and policy insights despite the potential challenges discussed so far (for a more up-to-date review, see Helliwell & Wang, 2012). The study of Oswald and Wu (2010), which reported a highly significant ( $p = .0001$ ) and large ( $r = .60$ ) correlation between objective quality of life factors and subjective satisfaction with life in the United States of America (USA) also supports the notion that subjective satisfaction with life is tapping in to something very similar to the conception of happiness in the USA. This study of over 1.3 million data points "suggests that subjective well-being data contain genuine information about the quality of people's lives" (Oswald & Wu, 2010, p. 579), which is likely to be of interest to policymakers. A further problem remains, however, in that none of the many existing measures of subjective well-being measure the same thing. This means that it is far from obvious which measure or measures actually measure well-being.

### **How do we know if we are measuring the right kind of happiness?**

It is well known by happiness researchers that the various questions in well-being surveys are not tracking the same phenomena (Dodge, Daly, & Huyton, 2012; La Placa, McNaught, & Knight, 2013). Indeed, many social scientists and philosophers recognize that the different kinds of questions used in subjective well-being surveys often endorse one particular theory of well-being (e.g., Feldman, 2010; McDowell, 2010). Do these differences matter if the measures are assessing something that is obviously good? As will be discussed, policy-relevant research suggests that, yes, they do.

What if findings based on different measures of well-being imply different policies? This is not just a theoretical problem, as many seemingly contradictory results from 'happiness science' show. For example, Kroll (2010) states that it is received wisdom amongst happiness researchers that increases in annual income (over about 10,000 Euros) have no effect on the average reported happiness in a country. However, other happiness researchers (e.g., Deaton, 2010) have found a statistically significant relationship between income and reported happiness in rich, as well as poor, countries. However this is no contradiction and no reason to think that happiness research is unreliable, since Deaton used a different measure of happiness to the measure used by the researchers Kroll was referring to. In Deaton's (2010) case, the finding that increasing income is correlated

with reported happiness well above 10,000 Euros is based on data from Gallup's World Polls. The Gallup happiness question is worded in a way that seems to encourage respondents to make comparisons with all other people in the world, not just their immediate reference group (Weijers, 2010). Many studies have shown that our reported satisfaction with life is significantly affected by whatever reference group is most salient to us at the time of the survey (Graham & Pettinato, 2002; Kahneman & Krueger, 2006; Merton, 1957). For example, the Gallup Word Polls' wording of their subjective well-being question makes a difference in this way; people in wealthy countries feel better about their lives when they think about how poor people in other countries are faring.

Indeed, Diener, Kahneman, Tov, and Arora (2010) provided evidence that the more a measure of subjective well-being asks about the respondents' emotional lives, and the less it encourages them to engage in cognitive deliberation about how satisfied they are with their life compared to what it might have been, the smaller and less significant the relationship between increases in income and increases in subjective well-being becomes.

So, how ought the problem of apparently contradictory findings from the science of happiness be resolved? First, happiness researchers should avoid generalising findings from different measures of well-being, unless those questions have been shown to track the same phenomena in the same circumstances in other studies. Second, policymakers should always refer to the original research papers, and even the survey questions themselves, if the researchers have not made the phenomena obvious (Weijers, 2010). Having found that the contradictory happiness science findings are based on the use of different measures of well-being, what should a policymaker do? Discovery of such a conflict illuminates the fundamental problem policymakers intent on using happiness science face, which is, 'which question or questions about subjective well-being are the most appropriate basis for policymaking?'

Policymakers should not expect to have to answer this question by themselves. Philosophers have debated the merits of various theories of well-being for at least two thousand years (Weijers, 2010) and social scientists have been debating over which measures of well-being are the most valid and reliable and the most representative of the best philosophical theories of well-being (Huppert, et al., 2009; McDowell, 2010). Unfortunately, there is still no agreement between academics on which question about subjective well-being is the most appropriate basis for policymaking. However, there are many candidates whose advantages and disadvantages have been discussed at length (e.g., Helliwell & Wang, 2012; Huppert, et al., 2009). This academic knowledge needs to be discussed widely to engender public debate on what makes people's lives go well for them and the proper aims of government. Haybron and Tiberius provide excellent examples of how

philosophers can engage with social scientists and policymakers to inform them about the relevant philosophical theories and debates about well-being (Haybron, 2008; Haybron & Tiberius, 2012; Tiberius, 2004; Tiberius & Hall, 2010). A populace that is informed about what makes citizens' lives go well for them will be able to exercise their democratic rights to lobby (and perhaps vote) for their preferred conception of well-being (Weijers, 2010). When this occurs, policy makers can work with social scientists to ensure that appropriate measures of well-being are used to guide public policy. This approach will allow happiness researchers to be confident that they are producing findings that are relevant for policymaking, and policymakers to fully benefit from happiness science.

### **What Role Should Happiness Play in Policymaking?**

In any democratic society citizens should decide what conceptions of happiness or well-being are important and the extent of the role any such conceptions should play in policymaking. In order to educate citizens and encourage effective evidence-based policymaking, academics and top-level civil servants need to better clarify the various conceptions of happiness and well-being, and whether we can accurately and efficiently measure happiness and well-being. After these issues have been clarified, the circumstances and policies that affect happiness or well-being (as defined in each case) should be investigated to help better understand where each concept of well-being fits in the economic landscape, and also to promote public debate on the relevant merits of certain kinds of happiness and other goods. Initial steps have been taken to provide sketches of what public policies based on happiness research might look like at the local (Rablen, 2012), national (Bok, 2010; Di Tella & MacCulloch, 2006), and international levels (Di Tella & MacCulloch, 2006), but specific and thoroughly justified recommendations are yet to emerge. Philosophers, psychologists, economists, statisticians, political scientists, and policymakers should work together collaboratively on this important endeavor in order to pool their collective expertise and progress most effectively.

Nobel Laureate Daniel Kahneman has voiced his worry that governments will import only one measure of subjective well-being, such as a satisfaction with life question, in their censuses (Jarden, 2011). He fears that this kind of measure could be too insensitive to be able to significantly correlate trends in reported happiness with changes in policy. Of most concern to Kahneman is if policymakers see the insensitivity of such measures as a reason to abandon happiness science entirely. It is key that governments and national statistical offices make sure that they put the right question in the census from the start.

However, this question is considered a red herring by most happiness researchers. As Seligman discusses in his book *Flourish* (2011), one question is simply not enough. There is considerable evidence in favour of a ‘dashboard’ approach; the use of several headline indicators of well-being (Forgeard, Jayawickreme, Kern, & Seligman, 2011; Seligman, 2011; Weijers, 2011b). The dashboard approach is popular amongst happiness researchers because philosophical and social scientific theory generally supports the notion that there are several distinct important dimensions of well-being, although people disagree about which of the different dimensions are important (Weijers, 2011b). For example, Seligman argues that positive emotion, engagement, meaning, positive relationships, and accomplishment are worthy of inclusion in a dashboard of subjective well-being indicators (Forgeard, et al., 2011; Seligman, 2011).

The United Kingdom’s Office for National Statistics (ONS) appears to have followed the dashboard approach to some extent, asking four subjective well-being questions in its ONS Opinion Survey, each of which represents a different group of philosophical theories about well-being (Beaumont, 2011) – these are questions on happiness, aspects of life being worthwhile, life satisfaction, and anxiety. The ONS has not yet confirmed which questions will capture data on subjective well-being in the long-run, with consultation still ongoing. It seems likely that several subjective well-being questions will be chosen. This cautious approach is surely a good one. Indeed, more research is required in order to better understand the most important aspects of well-being and the best way to measure each of them given the usual constraints on governmental data collection (Weijers, 2011b). So, the question of focus should be: ‘how can governments and national statistical offices make sure that they put the right *questions* in the census from the start’?

A ten-year international collaborative effort could go a long way to answering this important question. Several major longitudinal panel surveys (e.g. the British Household Panel Survey; Clark & Georgellis, 2013) are already conducted around the world, and some of these surveys ask subjective well-being questions. The gold-standard are those in which each respondent, and everyone else in their household, completes the same survey periodically for many years (Weijers, 2011b). These existing panel surveys would have to be standardized to some extent, including ensuring asking questions about events that have recently impacted their lives and a battery of subjective well-being questions for each potentially important aspect of well-being. Comparing the various measures of subjective well-being to the existing philosophical theories of well-being would be a useful way to assess whether the existing measures cover the scope of all possibly important conceptions of well-being. Such an assessment would have to be carried out carefully because of the considerable differences between philosophical accounts of well-being that are nonetheless grouped together.

For example, there is a variety of types of hedonism about well-being (Weijers, 2011c). While a simple “How happy have you been these days?” question might be thought to cover all hedonistic theories, other measures better capture the ideas behind specific hedonistic theories of well-being. For example, Kahneman and Krueger’s (2006) U-index which asks about the proportion of time respondents spend in a negative emotional state would be a good measure of Epicurus’ pain-minimising hedonism, while Watson and colleagues’ (1988) Positive and Negative Affect Scale would better represent Bentham’s (1789) net-pleasant-feelings-based hedonism. Diener’s (2006) ‘Guidelines for National Indicators of Subjective Well-Being and Ill-being’ is a good starting point for more specific guidance on the creation of such a collection of measures of subjective well-being, as are the OECD’s (2013) guidelines.

If this kind of survey could be conducted in several countries around the world, in a methodologically rigorous way (i.e., representative sampling, controlling for method effects), happiness researchers could potentially achieve a lot with the results (Weijers, 2011b). Researchers could assess what kinds of objective economic and demographic factors affect the various aspects of well-being and if these effects are cross-culturally robust. By surveying the same participants, and those they live with, over time, the surveys will help better understand the complex issues of adaptation to life events, and the relativity of reported happiness to the various attributes of the people around them (Clark forthcoming).

Furthermore, if the surveys were large enough, sub samples of the surveyed populations could be given slightly altered questions, or be administered in different formats to control for method effects. This would enable happiness researchers to test the accuracy and sensitivity of different questions, and different types of administration. At the conclusion of the multinational trial, governments and policymakers could decide which measures of well-being are best suited to their respective citizenries and policy goals (Weijers, 2011b). Indeed, the OECD’s current work on creating guidelines for measuring subjective well-being, combined with the political impetus created at the UN meeting on ‘Happiness and Wellbeing: Defining a New Economic Paradigm’ held in April 2012, and the success various countries are having in measuring well-being (e.g., France, UK), might result in such a widespread collaborative effort.

### **A Way Forward**

If well-being dashboards were incorporated into censuses, then political parties should be able to differentiate themselves by claiming that their policies favour certain aspects of well-being over others (Weijers, 2011b). To better facilitate public debate on the merits of these various measures of well-being, philosophers,

psychologists and economists should hold interdisciplinary public lectures and forums on different conceptions of well-being (e.g., such as the June 2012 Wellbeing and Public Policy Conference held in Wellington, New Zealand: Morrison & Weijers, 2012). Assuming that the public gain sufficient knowledge about the different aspects and conceptions of well-being being measured, the constant collecting of data on these well-being indicators could be a novel and effective way to measure a government's effectiveness—comparing the net benefit to well-being indicators with the net cost to capital stocks, such as natural resources, infrastructure, etc. (Weijers, 2012). In this way, measures of subjective well-being could be used to allow policymakers to consider the potential impacts of a policy on the happiness, as well as the wealth, of citizens. It will take a considerable amount of interdisciplinary work to reach this point, but once there, policymakers will have a useful set of tools at their disposal and citizens may become happier because of it.

### References

- Alesina, A., Di Tella, R., & MacCulloch, R. (2004). Inequality and happiness: Are Europeans and Americans different? *Journal of Public Economics*, 88, 2009–2042.
- Australian Treasury. (2006). *Wellbeing and public policy*. Canberra: Australian Treasury. Available from: [http://www.nss.gov.au/nss/home.NSF/533222ebfd5ac03aca25711000044c9e/d62854438d178820ca25727a0021d0ea/\\$FILE/Wellbeing%20and%20Public%20Policy%20-%20June%202006.pdf](http://www.nss.gov.au/nss/home.NSF/533222ebfd5ac03aca25711000044c9e/d62854438d178820ca25727a0021d0ea/$FILE/Wellbeing%20and%20Public%20Policy%20-%20June%202006.pdf)
- Beaumont, J. (2011). *Measuring national well-being: Discussion paper on domains and measures*. Office for National Statistics. Available from: [http://www.ons.gov.uk/ons/dcp171766\\_240726.pdf](http://www.ons.gov.uk/ons/dcp171766_240726.pdf)
- Bentham, J. (1789). *An introduction to the principles of morals and legislation*. Reprinted 1948, Oxford, UK: Blackwell. Reprinted 2005, Adamant Media Corporation.
- Bok, D. (2010). *The politics of happiness: What governments can learn from the new research on well-being*. Princeton, NJ: Princeton University Press.
- Cameron, D. (2010). *A transcript of a speech given by the Prime Minister on wellbeing on 25 November 2010*. Available from: <http://www.number10.gov.uk/news/pm-speech-on-well-being/>.
- Carneiro, P., & Heckman, J. J. (2003). Human Capital Policy. In J. J. Heckman & A. Krueger, (eds.), *Inequality in America: What Role for Human Capital Policies?* Cambridge, Mass: MIT Press.
- Clark, A. (forthcoming). Happiness, habits and high rank: Comparisons in economic and social life. In S. Bartolini (ed.), *Policies for happiness*. Oxford: Oxford University Press.
- Clark, A. E., & Georgellis, Y. (2013). Back to baseline in Britain: Adaptation in the British Household Panel Survey. *Economica*, 80(319), 496–512.
- Cohen, J. (1988). *Statistical power analysis for behavioural sciences* (2<sup>nd</sup> ed.). Hillsdale, NJ: Earlbaum.
- Cohen, R. (2011). The happynomics of life. *New York Times*, 12 March 2011.
- Cummins, R., & Gullone, E. (eds.) (2002). *The universality of subjective wellbeing indicators: A multi-disciplinary and multi-national perspective*. Kluwer Academic Publishers.
- Davidson, R. J., Ekman, P., Saron, C. D., Senulis, J. A., & Friesen, W. V. (1990). Approach-withdrawal and cerebral asymmetry: Emotional expression and brain physiology: I. *Journal of Personality and Social Psychology*, 58(2), 330–341.

- Deaton, A. (2010). Income, aging, health and well-being around the world: Evidence from the Gallup World Poll. NBER Chapters, *Research Findings in the Economics of Aging* (pp. 235–263). National Bureau of Economic Research.
- Diener, E. (2006). Guidelines for national indicators of subjective well-being and ill-being. *Applied Research in Quality of Life, 1*, 151–157.
- Diener, E. (2009a). *Assessing well-being: The collected works of Ed Diener*. Dordrecht: Springer.
- Diener, E. (2009b). *Culture and wellbeing: The collective works of Ed Diener*. Dordrecht: Springer.
- Diener, E. (2011). Happiness, economist debates. *The Economist*, 18 May 2011. Available from: <http://www.economist.com/debate/days/view/702>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.
- Diener, E., Kahneman, D., Tov, W., & Arora, R. (2010). Income's differential impact on judgments of life versus affective well-being. In E. Diener, D. Kahneman, & J. F. Helliwell (eds.), *International differences in well-being* (pp. 3–15). New York: Oxford University Press.
- Diener, E., Lucas, R. E., Schimmack, U., & Helliwell, J. F. (2009). *Well-being for public policy*. Oxford: Oxford University Press.
- Diener, E., & Scollon, C. (2003). *Subjective well-being is desirable, but not the summum bonum*. Unpublished Manuscript. University of Minnesota Workshop on Well-Being. Available from: [http://scholar.googleusercontent.com/scholar?q=cache:2gjgl65fdpQJ:scholar.google.com/&hl=en&as\\_sdt=0,5](http://scholar.googleusercontent.com/scholar?q=cache:2gjgl65fdpQJ:scholar.google.com/&hl=en&as_sdt=0,5)
- Diener, E. & Seligman, M. E. P. (2004). Beyond money: Toward an economy of wellbeing. *Psychological Science in the Public Interest, 5*, 1-31.
- Di Tella, R., & MacCulloch, R. (2006). Some uses of happiness data in economics. *Journal of Economic Perspectives, 20*(1): 25–46.
- Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing, 2*(3), 222–235.
- Dolan, P., Peasgood, T., & White, M. (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., & White, M. P. (2007). How can measures of subjective well-being be used to inform public policy? *Perspectives on Psychological Science*, 2(1), 71–85.
- Dorn, D., Fischer, J., Kirchgässner, G., & Sousa-Poza, A. (2007). Is it culture or democracy?: The impact of democracy, income and culture on happiness. *Social Indicators Research*, 82(3), 505–526.
- Easton, M. (2006). *Britain's happiness in decline*, BBC News, 2 May 2006. Available from: [http://news.bbc.co.uk/2/hi/programmes/happiness\\_formula/4771908.stm](http://news.bbc.co.uk/2/hi/programmes/happiness_formula/4771908.stm)
- England, R. W. (1998). Alternatives to Gross Domestic Product: A critical survey. In F. Ackerman, D. Kiron, N. Goodwin, J. Harris, & K. P. Gallagher (eds.), *Human wellbeing and economic goals* (vol. 3) (pp. 373–402). Island Press.
- Feldman, F. (2010). *What is this thing called happiness?* Oxford: Clarendon Press.
- Fitzpatrick, M. (2011). Mad men take over the coalition. *The British Journal of General Practice*, 61(582), 71.
- Forgeard, M. J. C., Jayawickreme, E., Kern, M., & Seligman, M. E. P. (2011). Doing the right thing: Measuring wellbeing for public policy. *International Journal of Wellbeing*, 1(1), 79–106. doi:10.5502/ijw.v1i1.15
- Freeman III, A. M., Haveman, R. H., Kneese, A. V. (1973). *The economics of environmental policy*. New York: John Wiley & Sons.
- Frey, B. S. (2008). *Happiness: A revolution in economics*. MIT Press.
- Frey, B. S., & Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature*, 40(2), 402–435.
- Frey, B. S., & Stutzer, A. (2007). Should national happiness be maximized? Institute for Empirical Research in Economics, *University of Zürich, Working Paper Series*, Working Paper No. 306, March 2007. Available from: <http://www.iew.uzh.ch/wp/iewwp306.pdf>
- Gallup Inc. (2008). *World Poll Questions*, Washington, DC: Gallup Inc. Available from: [http://media.gallup.com/dataviz/www/WP\\_Questions\\_WHITE.pdf](http://media.gallup.com/dataviz/www/WP_Questions_WHITE.pdf)
- Graham, C. (2009). *Happiness around the world: The paradox of happy peasants and miserable millionaires*. Oxford: Oxford University Press.
- Graham, C., & Pettinato, S. (2002). Frustrated achievers: Winners, losers and subjective well-being in new market economies. *Journal of Development Studies*, XXXVIII, 100–140.
- Hausman, D. M. (2010). Hedonism and welfare economics. *Economics and Philosophy*, 26, 321–344.

- Haybron, D. M. (2008). Philosophy and the science of subjective well-being. In M. Eid & R. Larsen (eds.), *The science of subjective well-being* (pp. 17–43). New York: Guilford.
- Haybron, D. M., & Tiberius, V. (2012). Normative foundations for well-being policy. *Papers on Economics and Evolution*, #1202. Available from: <ftp://papers.econ.mpg.de/evo/discussionpapers/2012-02.pdf>
- Helliwell, J. F. (2006). Well-Being, Social Capital and Public Policy: What's New?\*. *The Economic Journal*, 116(510), C34–C45.
- Helliwell, J. F., & Wang, S. (2012). The state of world happiness. In J. Sachs, J. F. Helliwell, & R. Layard (eds.), *World happiness report*. Commissioned for the United Nations. Retrieved September 4, 2013 from: <http://www.earth.columbia.edu/sitefiles/file/Sachs%20Writing/2012/World%20Happiness%20Report.pdf>
- Huppert, F. A., Marks, N., Clark, A., Siegrist, J., Stutzer, A., Vittersø, J., & Wahrendorf, M. (2009). Measuring well-being across Europe: Description of the ESS well-being module and preliminary findings. *Social Indicators Research*, 91(3), 301–315.
- Inglehart, R., Foa, R., Peterson, C., & Welzel, C. (2008). Development, freedom, and rising happiness: A global perspective (1981–2007). *Perspectives on Psychological Science*, 3(4), 264–285.
- Jarden, A. (2011). An interview with Daniel Kahneman. *International Journal of Wellbeing*, 1(1), 186–188. doi:10.5502/ijw.v1i1.22
- Johns, H., & Ormerod, P. (2008). The unhappy thing about happiness studies. *Real-World Economics Review*, 46, 139–146.
- Joshanloo, M. (2013). Eastern Conceptualizations of Happiness: Fundamental Differences with Western Views. *Journal of Happiness Studies*. Online first. Retrieved September 4, 2013 from <http://link.springer.com/article/10.1007/s10902-013-9431-1#page-1>.
- Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *The Journal of Economic Perspectives*, 20(1), 3–24.
- Kennedy, R. F. (1968). *Speech at University of Kansas*, March 18. Transcript available from: [http://www.glaserprogress.org/program\\_areas/pdf/Remarks\\_of\\_Robert\\_F\\_Kennedy.pdf](http://www.glaserprogress.org/program_areas/pdf/Remarks_of_Robert_F_Kennedy.pdf)
- Kroll, C. (2010). Social democracy and happiness. *Social Europe Journal*. Available from: <http://www.social-europe.eu/2010/01/social-democracy-and-happiness/>
- La Placa, V., McNaught, A., & Knight, A. (2013). Discourse on wellbeing in research and practice. *International Journal of Wellbeing*, 3(1), 116–125.

## Running Head: THE SCIENCE OF HAPPINESS FOR POLICYMAKERS

- Layard, R. (2003). *Happiness: Has social science a clue?* Lionel Robbins Memorial Lectures. Available from:  
<http://cep.lse.ac.uk/events/lectures/layard/RL030303.pdf>
- Layard, R. (2005). *Happiness: Lessons from a new science*. Penguin.
- Layard, R. (2010). Measuring subjective well-being. *Science*, 327(5965), 534–535.
- Layard, R. (2011). Happiness, Economist Debates, *The Economist*, 17 May 2011. Available from:  
<http://www.economist.com/debate/days/view/698>
- Lopez, S. J., & Snyder, C. R. (Eds.) (2003). *Positive psychological assessment: A handbook of models and measures*. Washington, D. C.: American Psychological Association.
- Lucas, R. E., Diener, E., & Suh, E. M. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology*, 71(3), 616–28.
- Lyubomirsky, S. (2008). *The how of happiness: A scientific approach to getting the life you want*. Penguin.
- Marks, N., & Shah, H. (2004). A well-being manifesto for a flourishing society. *Journal of Public Mental Health*, 3(4), 9-15.
- Mathews, G. (2012). Happiness, culture, and context. *International Journal of Wellbeing*, 2(4), 299–312.
- McDowell, I. (2010). Measures of self-perceived well-being. *Journal of psychosomatic research*, 69(1), 69–79.
- Merton, R. K. (1957). *Social theory and social structure*. Glencoe: The Free Press of Glencoe.
- Michalos, A. C. (2011). What did Stiglitz, Sen and Fitoussi get right and what did they get wrong? *Social Indicators Research*, 102, 117–129.
- Morrison, P. S., & Weijers, D. (2012). Wellbeing in Wellington: A report on the June 2012 Wellbeing and Public Policy Conference. *Policy Quarterly*, 8(4), 51–55.
- Nozick, R. (1974). *Anarchy, State, and Utopia*. Oxford: Blackwell, 1991.
- Nozick, R. (1989). *The Examined Life: Philosophical Meditations*. New York: Simon and Schuster.
- OECD (Organisation for Economic Cooperation and Development). (2013). *Your Better Life Index: Executive summary*. Organisation for Economic Cooperation and Development. Available from:  
[http://oecdbetterlifeindex.org/wpsystem/wp-content/uploads/2012/02/YourBetterLifeIndex\\_ExecutiveSummary3.pdf](http://oecdbetterlifeindex.org/wpsystem/wp-content/uploads/2012/02/YourBetterLifeIndex_ExecutiveSummary3.pdf)
- Oswald, A. J., & Wu, S. (2010). Objective confirmation of subjective measures of human well-being: Evidence from the U.S.A. *Science*, 327(5965), 576–579.

Rablen, M. D. (2012). The promotion of local wellbeing: A primer for policymakers. *Local Economy*, 27(3), 297–314.

Royal Government of Bhutan (2012). *The report of the high-level meeting on wellbeing and happiness: Defining a new economic paradigm*. New York: The Permanent Mission of the Kingdom of Bhutan to the United Nations. Thimphu: Office of the Prime Minister.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 69, 719–727.

Schimmack, U., & Oishi, S. (2005). The influence of chronically and temporarily accessible information on life satisfaction judgments. *Journal of Personality and Social Psychology*, 89(3), 395–406.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3), 513–23.

Schwarz, N., & Strack, F. (1999). Reports of subjective well-being: Judgemental processes and their methodological implications. In D. Kahneman, E. Diener, & N. Schwarz (eds.), *Wellbeing: The foundations of hedonic psychology* (pp. 61–84). New York: Russell Sage.

Schwarz, N. (1987). *Stimmung als information* [Mood as information]. Heidelberg: Springer Verlag.

Self, A., Thomas, J., & Randall, C. (2012). *Measuring national well-being: Life in the UK, 2012*. London: Office for National Statistics.

Seligman, M. E. P. (2011). *Flourish*. New York: Simon & Schuster.

Stoker, G. (2013). Engaging Citizens: Can Westminster coexist with meaningful citizen-centric engagement? In E. A. Lindquist, S. Vincent, & J. Wanna (eds.), *Putting Citizens First: Engagement in policy and service delivery for the 21st century* (pp. 25–37). Canberra: ANU Epress. Retrieved September 4, 2013 from <http://epress.anu.edu.au?p=250381>.

Stoll, L., Michaelson, J., & Seaford, C. (2012). Well-being evidence for policy: A review. *London: New Economics Foundation*. Retrieved September 04, 2013 from [http://scholar.google.co.nz/scholar?q=%22Well-being+evidence+for+policy%3A+A+review%22&btnG=&hl=en&as\\_sdt=1%2C5](http://scholar.google.co.nz/scholar?q=%22Well-being+evidence+for+policy%3A+A+review%22&btnG=&hl=en&as_sdt=1%2C5).

Stiglitz, J. E., Sen, A., & Fitoussi, J. P. (eds.) (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.

- Thin, N. (2012). Counting and recounting happiness and culture: On happiness surveys and prudential ethnobiography. *International Journal of Wellbeing*, 2(4), 313–332.
- Tiberius, V. (2004). Cultural differences and philosophical accounts of well-being. *The Journal of Happiness Studies*, 5, 293–314.
- Tiberius, V., & Hall, A. (2010). Normative theory and psychological research: Hedonism, eudaimonism, and why it matters. *Journal of Positive Psychology*, 5(3), 212–225.
- New Zealand Treasury. (2010). *Statement of intent 2010–2015*. Wellington, New Zealand: New Zealand Treasury.
- New Zealand Treasury (2011). *Working towards higher living standards for New Zealanders*. Wellington, New Zealand: New Zealand Treasury. Available from: <http://www.treasury.govt.nz/publications/research-policy/tp/higherlivingstandards/tp-hls-may11.pdf>
- Turton, D. (2009). The real dirt on happiness studies: A reply to 'The Unhappy Thing about Happiness Economics'. *Real-World Economics Review*, 49, 83–89.
- Urry, H. L., Nitschke, J. B., Dolski, I., Jackson, D. C., Dalton, K. M., Mueller, C. J., Rosenkranz, M. A., Ryff, C. D., Singer, B. H., & Davidson, R. J. (2004). Making a life worth living: Neural correlates of well-being. *Psychological Science*, 15(6), 367–372.
- Vaillant, G. (2011). The happiness effect. *Bulletin of the World Health Organization*, 89(4), 246–247. Retrieved September 02, 2013, from [http://www.scielo.org/scielo.php?script=sci\\_arttext&pid=S0042-96862011000400005&lng=en&tlng=en](http://www.scielo.org/scielo.php?script=sci_arttext&pid=S0042-96862011000400005&lng=en&tlng=en). 10.1590/S0042-96862011000400005.
- Veenhoven, R. (2002). Why social policy needs subjective indicators. *Social Indicators Research*, 58(1–3), 33–46.
- Veenhoven, R. (2010). Greater happiness for a greater number: Is that possible and desirable? *Journal of Happiness Studies*, 11, 605–629.
- Watson, D., Clark, L. A., & 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.
- Weijers, D. (2010). A warning to policy-makers: What exactly is well-being anyway? *Social Europe Journal*, 10 September 2010. Available from: <http://www.social-europe.eu/2010/09/a-warning-to-policy-makers-what-exactly-is-well-being-anyway/>

- Weijers, D. (2011a). The Experience Machine Objection to Hedonism. In M. Bruce & S. Barbone (eds.), *Just the Arguments* (pp. 229–231). Wiley-Blackwell.
- Weijers, D. (2011b). National accounts of well-being: What should we put in the census? *Social Europe Journal*, 15 February 2011. Available from: <http://www.social-europe.eu/2011/02/national-accounts-of-well-being-what-should-we-put-in-the-census/>
- Weijers, D. (2011c). Hedonism, *Internet Encyclopedia of Philosophy*. Retrieved September 4, 2013 from <http://www.iep.utm.edu/hedonism/>.
- Weijers, D. (2012). National accounts that make governments more efficient by making them more accountable. Available from the official Bhutanese government's website for the UN meeting on 'Happiness and Wellbeing: Defining a New Economic Paradigm': <http://www.2apr.gov.bt/images/stories/2page/danweijers.docx>
- Weijers, D. (2013a). Nozick's Experience Machine is Dead, Long Live the Experience Machine! *Philosophical Psychology*. Online first. Retrieved September 4, 2013 from <http://www.tandfonline.com/doi/full/10.1080/09515089.2012.757889>.
- Weijers, D. (2013b). Intuitive Biases in Judgements about Thought Experiments: The Experience Machine Revisited. *Philosophical Writings*, 41(1), 17–31.
- Weijers, D., & Jarden, A. (2011). Wipe that smile off your face. *The Philosopher's Magazine*, 52, 53–58.
- Weijers, D., & Schouten, V. (forthcoming). An assessment of recent responses to the experience machine objection to hedonism. *Journal of Value Inquiry*. Retrieved September 4, 2013 from <http://www.danweijers.com/pdf/An%20assessment%20of%20recent%20responses%20to%20the%20experience%20machine%20objection%20to%20hedonism.pdf>.
- Woolcock, M., & Narayan, D. (2000). Social capital: Implications for development theory, research, and policy. *The World Bank Research Observer*, 15(2), 225–249.