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Written evidence

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Environmental Audit Committee

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List of additional written evidence

(published in Volume II on the Committee's website www.parliament.uk/eacom)

Written evidence

Written evidence submitted by Dr Jan Eichhorn

Dr Eichhorn is a research fellow in the School of Social and Political Science at the University of Edinburgh. His work focuses on subjective well-being and in particular on how to properly contextualise individual-level influences on subjective well-being using regional-or country-level factors that affect the experiences of individuals. His doctoral thesis explored how economic, demographic and cultural differences between countries affect the experience of unemployment. In his work Dr Eichhorn uses advanced quantitative methods to analyse large scale social surveys. Results of his work have been published in high ranking journals including European Sociological Review and the Journal of Happiness Studies. Dr Eichhorn contributed to the ONS consultation on "Measuring National Well-being" through written submissions, engagement in the British Sociological Association's Happiness Study Group and public outlets (Eichhorn 2011), eliciting a response from Paul Allin, then in charge of the ONS programme.

Dr Eichhorn currently holds two collaborative research grants under the ESRC programme "The Future of Scotland the UK" acting as co-investigator on both.

0. Executive Summary

This report presents evidence to highlight current weaknesses in the ONS "Measuring National Well-being" project in relation to Indicators of Subjective Well-being (SWB), such as happiness or life-satisfaction. It points out how these weaknesses could be overcome in order to provide better tools for policy development. The key points of the report are:

- The way SWB measures are constructed from the data for reporting is partially insufficient, as common features of SWB scales are not taken into account. This leads to inappropriate interpretations about levels of subjective well-being in the UK.
- The reports so far are not sufficiently able to reflect people at "extreme" points (for example very old age), although we know from other studies that their SWB patterns differ. Addressing this has important policy implications (for example for hospital care for the elderly).
- The comparisons of SWB levels across UK regions have to be considered with caution at the moment. So far it has not been explored whether the meaning of different SWB measures is consistent across all of the UK. If it is not, then comparisons of levels would be a misrepresentation.
- So far many influences on SWB have been found at the individual level as well as for different levels of aggregation (eg communities or regions). However, no proper distinction is being made between those different levels—which may lead to wrong conclusions, if results from one aggregate unit are simply assumed to also apply to other aggregations or even individuals.
- Some of the mean levels of SWB measures comparing different UK regions have been misleading as they have entered public discourse stipulating substantial differences, where there largely were none.
- Until now there has been a lack of considering how societal context factors influence individual-level SWB patterns. This may lead to the misclassification of so-called "deviant" subgroups, although potentially the difference from the norm may be caused by contextual factors.

1. Introduction

The "Measuring National Well-being" project conducted by the ONS is generally highly commendable. It widened the perspective of well-being indicators beyond standard economic measures. Its greatest contribution in the opinion of the author is that it actively sought to incorporate subjective measures of well-being. Such measures allow us to see how changes in certain objective circumstances (for example: income, employment, family relations, etc.) may actually have different effects on an individual's perception and motivation depending on other factors. However, there are several shortcomings in the use of subjective well-being (SWB) concepts so far in the project. If proper policy is to be developed based on the proposed measures, it is imperative that these shortcomings are addressed.

2. Focusing on Levels of SWB

Many of the analyses presented in ONS papers, including the summary publication from November 2012 (Self et al.) show levels of SWB on different indicators (for example life-satisfaction). These levels are then compared across different groups (for example regions or age groups). This of course is of great interest and provides an overview of which groups of people have higher levels of SWB compared to others. However, there are a number of problems with these analyses potentially meaning that wrong conclusions are drawn.

3. Choosing Measures

People in the UK (and most other Western countries) tend to be overt to choosing SWB measures at the lower extremes. Therefore statements in the reports suggesting that low levels of "completely dissatisfied" people are a good finding (Self et al. 2012, p. 17), for example when looking at household income satisfaction, have only limited merit. We would not expect to find many people valuing themselves at such low levels, partially because there is a certain social desirability for people to consider positives in their lives when making such evaluations. The interpretation of absolute levels on a particular subcategory (such as “completely dissatisfied”) is therefore of rather little meaning. In this light, it is very problematic to group medium and high rankings of life-satisfaction together (as for example done on p. 32 in the same paper). This is where we really see some differentiation that is masked through such an approach. A person valuing their life-satisfaction as only medium (neither satisfied/nor dissatisfied) has to be understood as rather distinct from a person saying they actually are satisfied.

4. Considering “Extremes”: Drops in SWB in Late Life

In analyses that compare many groups the focus usually is—understandably—on the “larger picture”. The most poignant case is the analysis of SWB over the life course. Self et al. (2012, p. 33) replicate a common finding of a U-shaped relationship: Young and old people have the highest levels of SWB, the middle-aged have the lowest levels. However, they overlook a very crucial aspect (which has been overlooked in nearly all ONS papers so far): for the very old, we actually see a dip in SWB again, which is not commented on. It is difficult to analyse those aged 75 and above, because they only make up a limited proportion of a survey sample. However, we have good evidence to believe that we will often find a substantial drop in SWB in the latest stages of life (Brockmann 2010). One of the key factors leading to a drop appears to be hospitalisation—raising highly relevant questions about the role of care and treatment in old age and what that means for individuals. A strong focus on well-being in old age seems highly imperative as a further field of detailed investigation.

5. Regional Variation: Real Differences?

One of the aims of the ONS project stipulated early was to be able to compare levels of SWB across regions in the UK (Waldron 2010) effectively resulting in rankings. Since then a range of mean comparisons across regions has been presented, however one elementary question about this has been largely ignored so far (see for example Tikler & Hicks 2011): Do we measure the same thing when we measure a particular domain of SWB (for example life-satisfaction) in all regions of the UK. In other words, is the understanding of what satisfaction or happiness is largely the same across the UK or are there regional variations in the constitution of the concepts themselves. If the concepts can be seen to be perceived homogeneously on average in each region of comparison, there are no problems in comparing average scores. However, if there is variation in the composition of the meaning of SWB domains, then a comparison would be highly problematic: We would compare values for indicators that measure different things in different regions. There are techniques to address this issue. The key is to check whether the same elements contribute to a particular SWB measure in the same way across regions, before comparing the levels thereof. This can be done through a well-established technique: Multi-group Confirmatory Factor Analysis (MGCFA). While it goes beyond the basic statistical tools employed in the reports so far, it is absolutely imperative to do so, because if we simply assume that the measures are equivalent conceptually we may present rankings of regions that are not actually reflective of differences in the level of a particular SWB domain. Instead they would highlight differences in the meaning of that SWB domain for people—something that should not be ranked.[1]

6. Distinguishing levels of aggregation: Communities ≠ Regions ≠ Countries

The ONS papers engage with analyses that correlate SWB measures to many other factors at a range of different levels of aggregation. There are analyses that look at relations to SWB on the individual level, but also reports that look at the relationship of SWB to other variables at the level of communities, regions or larger areas. There is a key problem however, because the relationships identified are not properly differentiated based on the level of aggregation we look at (see Beaumont 2011 or Evans 2011 for example). However, this is of great importance: If we find a particular relationship to exist for individuals (for example a “U-shaped” relationship between age and SWB), this does not mean that we have to find the same relationship at a greater level of aggregation (for example, we may not necessarily find a “U-shaped” relationship between average age in cities and the average SWB in the cities). The relationship between two variables can differ at different levels of aggregation—sometimes a relationship that may exist at one level cannot be identified at all at another. Therefore, further reports should be much more careful in considering what level of aggregation they are focussing on—and not simply assume that results found, for example, at the local level will also apply to the national level. Instead this needs to be investigated separately.

7. Ensuring that Differences are Substantial and Significant

Even when deciding on a particular level of aggregation, further analyses can lead to wrong conclusions when comparing levels of SWB across regions but not accounting for problems of substantive and statistical

[1] Some own computations breaking down the UK into 36 regions (based on European NUTS 2 geographical classifications) suggest that measures of satisfaction are relatively similar in meaning and composition across most regions. At the same time though, we find deviances at the upper and lower ends where particular domains of satisfaction (here comparing satisfaction with health, leisure time and income) are substantially more or less important for the constitution of overall satisfaction in some regions compared to the majority. Such regions should ideally be identified and investigated with special caution before assessing the appropriateness of including them in “happiness rankings” which could be highly misleading in that case.

significance. Several mean comparisons of SWB measures (for example life-satisfaction) have been published comparing different sets of regions. While a very detailed breakdown published in 2012 allowed to see differences between certain areas which were substantial and statistically significant (ONS 2012a), this was not the case in all publications. In a different report (ONS 2012b, p. 18) for example the UK is broken down into 12 areas for which mean life-satisfaction scores are presented. The scores range only from 7.2 to 7.6 (on a 10-point scale). Even if results were significant in a statistical sense, the substantive difference is minimal, in particular when considering that 7 of the 12 areas score 7.4 on average. Comparing those regions based on this measure at this level of aggregation has little meaning—apart from finding that at this level there is hardly any variation. Some may argue that there is no problem with publishing these results as the report does not actively encourage a ranking based on this measure, but merely presents a neutral depiction. That however would be naïve considering the public role of the ONS. And indeed several institutes and media outlets picked up this particular table comparing the regions stating that Londoners would be the least satisfied in the country (for example nef 2012), a claim that no serious researcher would make with this data as support, but that permeated the public discourse nevertheless.[2] Comparisons and rankings between regions need to be assessed not only with regards to the validity of the measures as outlined in paragraph 6. It also has to be ensured that the differences in levels between regions are substantial and statistically significant (meaning that they do not fall within a certain frame of uncertainty based on sampling variation).

8. Context Matters: Using Multilevel Approaches

It is good to see that the ONS aims to engage more extensively with regression based research (Self et al. 2012, p. 7). This would allow to control for several influencing factors as many of the correlations shown between different variables and SWB measures could be altered as there are a great variety of influences on SWB that also interact with each other. However, this is not sufficient for a comprehensive analysis. All investigations focussing on the individual level effectively assume that the influences on SWB are not dependent on contextual factors. While there are some analyses looking at aggregate factors (for example whether people in a particular type area are more or less satisfied), these two perspectives (focussing on individual or contextual levels) are usually kept separate. This is highly problematic as obviously, individuals always exist in a particular economic, social and cultural context. Multilevel modelling techniques exist to easily integrate multiple layers of analysis and have been applied in social scientific research extensively. So far though, none of the ONS investigations have included such approaches. Even more strikingly the reviews of existing projects effectively do not engage with research employing approaches that systematically contextualise individuals' SWB constitution with societal factors. Considering that policy is always developed as an intervention from an aggregate and then applied to groups of individuals, ignoring this may lead to ineffective or counter-productive policy, as people's motivations and perception may be oversimplified as independent of their societal context.

9. Identifying Actually Relevant Processes

Often individual-level influences on SWB are moderated by contextual factors. Consider the following example: It is commonly found that religious people are happier (individual level). However, as the author of this evidence, Eichhorn (2012a), has shown, this effect is highly dependent on what type of society one lives in. When taking into account the average religiosity of a country we find that higher religiosity only has a positive effect on happiness for an individual, when the person lives in a more religious society. The positive relationship with SWB is about being in congruence with your environment, not being religious per se. Another good example points to the effect of unemployment on SWB. As replicated in many of the ONS papers, unemployment is indeed associated with a loss in life-satisfaction. However, the strength of this relationship is dependent on contextual factors. Clark & Oswald showed in 1994 that the negative impact is less pronounced when a person lives in an area with higher unemployment (because they would not be as deviant from the norm). This moderation however is strongly dependent on the level of aggregation. Pittau et al. (2010) for example find this context effect for more regional levels, but not at the country level. The level of aggregation matters strongly and only an integrative multilevel perspective could reveal this. Eichhorn (2012b) showed that at the country level, the key factors that influence how strongly unemployment impacts individual SWB include the age structure of the population and cultural factors such as the perception of autonomy people have, but not so much commonly assumed economic factors, such as unemployment rates or GDP per capita.

10. Implications for Policy Making and further Analyses

The importance of considering contextual influences on individual SWB patterns cannot be overstated. As outlined by the ONS (Self et al. 2012) subsequently emphasis is being placed on identifying groups of people that are considered to be different or deviant from the norm with regards to their well-being patterns. But it is crucial to understand why they are different. Two possibilities exist: Indeed, there could be some substantive differences for these groups. However, it is also possible that differences are not based on individual factors, but contextual influences. If this were the case, but ignored, a group may be labelled as "deviant" and subsequently receiving a policy intervention—but inappropriately so. If the reason for a different SWB pattern

[2] It may be noted here that in own computations of the UK breakdown into 36 regions as described above, there also were no significant differences in mean life-satisfaction found at this level of aggregation. It appears that significant and systematic variation with substantial size occurs at lower levels of aggregation as presented in ONS 2012a.

stems from the interplay between contextual factors and personal factors, looking at either of them separately will not help us to genuinely understand what the point of intervention actually should be (groups of individuals or a particular contextual influence at a specific level of aggregation that needs to be determined).

11. Conclusion

The ONS project is commendable in many ways, highlighting the need to move beyond traditional, simplistic indicators of well-being. With regards to the work on subjective well-being (SWB), there are several limitations in the work so far.

12. Limitations

- Deficiencies in the construction of appropriate measures and interpretations on SWB data, in particular not taking into account an overtness of people to give very low scores and a lack of distinguishing between very high, high and moderate levels of SWB.
- A lack of properly accounting for deviance at the extremes of comparative analyses (for example very old age)
- Completely missing an investigation into the question of whether conceptions of SWB are constituted in the same way across the UK to confirm the validity of measures.
- An underdeveloped degree of differentiating between findings from different levels of aggregation which cannot simply be assumed to be equivalent.
- Reporting of SWB measures comparing areas which are not substantially or significantly different from each other, but lend themselves to easy public dissemination.
- A lack of engaging with multilevel perspectives, thus making individual-level patterns appear as definitive—lending itself to a misidentification of intervention points.

13. Recommendations

- Further reports and research should engage more carefully with SWB scales, identifying where substantial variation lies and differentiating in detail there.
- Ways for engagement with individuals at “extremes” need to be developed—for example those in very old age, through booster samples in surveys or separate studies.
- There is a strong need for investigations into the constitution of SWB concepts across the UK to ensure that mean comparisons are actually valid. This could be done using multi-group confirmatory factor analysis based approaches.
- Findings about correlations between particular factors and SWB measures should be sorted by levels of aggregation (eg individual, local, regional, national). Where gaps exist (ie a relationship has been explored for one level but not another), these should be filled.
- It should be ensured that all area or group based mean comparisons establish that the differences found are substantial and statistically significant before reporting them.
- Multilevel perspectives and models need to be incorporated into these investigations with the particular aim to distinguish whether subgroups that deviate from the norm do so because of an actual difference or a contextual influence.

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10 May 2013

Written evidence submitted by the Royal Statistical Society

Executive summary

1. The EAC's interest in wellbeing, sustainable development and the four capitals (natural, produced, human and social capital) is timely. We argue that the EAC's definition of wellbeing as comprising the four capital needs considerable work before useful and measurable models can be constructed. Wellbeing and sustainable development are so closely interwoven that wellbeing measures and SDIs should be taken forward through a single measurement framework to meet a range of policy needs in a coherent and efficient way. These measures should also reach public opinion and political debate, as well as policy-making, if they are to help us to stop "mis-measuring our lives" by using GDP alone.

Introduction

2. The Royal Statistical Society is a learned society for statistics, a professional body for statisticians and a charity which promotes statistics for the public good. Our mission includes to foster the production and publication of statistics on aspects of society, in which we see the wellbeing of society as a key concern. We are also actively involved in promoting the public understanding and use of statistics, again recognising that robust and relevant statistics on wellbeing should be readily available to the public.

Discussion

3. In the introduction to the EAC's inquiry, wellbeing is said to comprise the four capitals (natural, produced, human and social capital). While wellbeing can be linked with these capitals, it is still far from clear what we mean by wellbeing, or how wellbeing is affected by the stocks of these capitals, or by changes in their levels. Both wellbeing and sustainable development measures effectively draw on the same broad model using the capitals, so the EAC's inquiry is a timely opportunity to work towards a single measurement framework, to support the assessment of the wellbeing of the nation, progress over time, and the sustainability of current developments.

4. Since the 1990s, there have been moves to produce a bigger picture of wellbeing and progress than that given by the conventional national accounts. The first step is "to view the way in which natural resources and environments provide economic benefits as being similar to the way in which any valuable asset provides "services" to an economy" (Pearce and Barbier, 2000, p19). The second step is to recognise that human and social capital, as well as natural capital and produced capital, support the economic process. The third and final step is to accept that national wellbeing (or human welfare, in economic terminology) depends not just on the economic process but also on how all four capitals also support the things that make life worthwhile.

5. A number of high-level representations of such a big picture are starting to appear (eg Harper and Price, 2011) but we are a long way from constructing useful and measurable models. There are significant issues to consider in defining, measuring and valuing each capital. It is not clear whether it is the level of capital, or changes in the level, that drives wellbeing. The wellbeing of some individuals might include an element of the assessment of the sustainability of the current position, as one example of how wellbeing and sustainable development are interwoven.

6. Both the Measuring National Wellbeing programme and the Sustainable Development Indicators are motivated by the aim to look not just at GDP but at wider measures of economic performance, social progress, the state of the environment and sustainability. They include measurement of capital (eg ONS, 2013). While there may be some advantages in letting a number of flowers bloom, it might be more productive to bring these developments together, to work on a single measurement framework to meet a range of policy needs in a coherent and efficient way.

7. Scott (2012) reviewed the potential conflict between improving wellbeing and sustainability as two central public policy goals of government. There is much common ground, especially through the focus each policy area has on broadly the same set of indicators. But to reach a potential "win-win scenario of wellbeing and sustainability" needs a "clearer conceptual framework for policy makers regarding different wellbeing constructs which would facilitate more transparent discussions".

8. These measures should also reach public opinion and political debate, as well as policy-making, if they are to help us to stop "mis-measuring our lives" by using GDP alone, in the words of Stigtitz, Sen and Fitoussi (2010).

Recommendations

9. That the Committee may wish to encourage ONS and Defra to consider a single framework for national wellbeing and sustainable development measures with some urgency, rather than necessarily waiting for each set of measures to stabilise. This framework should include all four capitals.

10. That the Committee stimulates political and public debate about how we live today, as well as opening up Government policy to wellbeing.

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11 June 2013

Written evidence submitted by the Economic and Social Research Council (ESRC)

Summary

1. The ESRC is the only UK funder of long-term, strategic social science research, identifying and addressing key societal challenges and coordinating the national social science research infrastructure to address them. The UK has an outstanding social science research base with most areas considered to be exceptional by world standards and ESRC-funded research and data resources support policy and practice across all sectors of the UK's economy and society.

2. The submission below details, in brief, some of the activities that the ESRC is funding which relate to the topic of this inquiry. More details on any of these activities can be provided on request. In summary the ESRC is a key funder of research in the area of natural capital and other aspects of wellbeing. The Council is funding work via its research investments such as the Centre for Economic Performance, via a panel especially convened with the US National Institute on Aging (NIA) and via its longitudinal studies. The Council is also committed to building capacity in the area of quantitative data analysis.

Submission

3. The ESRC is a key funder of research in the area of natural capital, through its support of the *National Ecosystems Assessment (NEA)* and it's follow on, *Social and Environmental Economic Research (SEER)* into Multi-Objective Land Use Decision Making, The *Rural Economy and Land Use Programme (RELU)* and the *Centre for Climate Change Economics and Policy (CCCEP)* amongst others. SEER PI Professor Ian Bateman became a founder member of the Natural Capital Committee (NCC) in 2012. In early 2013 SEER submitted a contribution to the first Natural Capital Report to be published by the government in Spring 2013.

4. The ESRC has co-funded, with the NIA, a US *National Academies of Science (NAS) panel on measurement of subjective wellbeing*. The panel will be concluding its work with the publication of a report late in 2013. The remit of the panel is to review the current state of research and evaluate methods for the measurement of subjective well-being (SWB) in population surveys. On the basis of this evaluation, the panel will offer guidance about adopting SWB measures in official government surveys to inform social and economic policies. Although primarily focused on SWB measures for inclusion in U.S. government surveys, the panel will also consider inclusion of SWB measures in surveys in the United Kingdom and European Union, in order to facilitate cross-national analysis that complements comparisons over time and for population groups within the United States. The Office for National Statistics (ONS) National Wellbeing Programme and Organisation for Economic Co-operation and Development (OECD) have been fully engaged in the work of the panel. Representatives from ESRC investments sit on the panel: Professor Paul Dolan from the wellbeing strand of

the *Centre for Economic Performance* (CEP) and Professor Amanda Sacker from the International Centre for *Lifecourse Studies in Society and Health* which has several research strands related to wellbeing.

5. Professor Lucinda Platt, Director of the ESRC funded *Millennium Cohort Study*, is engaged with the ONS National Well-Being Programme as a member of the ONS Measuring National Well-Being Technical Advisory Group. The Millennium Cohort Study is funded by the ESRC and a consortium of co-funders across Government departments and the devolved administrations, and is housed at the ESRC *Centre for Longitudinal Studies* at the Institute of Education, along with the *1970 British Cohort Study* and the *1958 National Child Development Study* which are funded by the ESRC. These large-scale birth cohort studies offer a very important source of longitudinal data on well-being, as noted in a report published by ONS and Longview in July 2012, which also references the central role of *Understanding Society* in measuring well-being: *The Measurement of Well-being: the Contribution of Longitudinal Studies*.

6. Understanding Society carries a range of wellbeing measures including life satisfaction on several dimensions—most of these measures had previously been included in the British Household Panel Study (BHPS) so they provide a long run of data on consistent measures allowing analysis of change for the population as a whole but also change at the individual level. Understanding Society also carries other measures of wellbeing including the well-validated Warwick Edinburgh Mental Well-being Scale (WEMWBS) and related measures of distress (the General Health Questionnaire 12), of self-efficacy, of quality of family relationships and of social support. Understanding Society also carries a range of other measures of human and social capital. The ONS has used some of the BHPS and Understanding Society data in its well-being reports.

7. A member of the Understanding Society team, Professor Steve Pudney, has been involved in providing technical advice to the ONS on well-being measurement. He has also undertaken research on well-being measurement in surveys based on experimental data from the Understanding Society Innovation, reported in an ISER working paper: https://www.iser.essex.ac.uk/publications/working-papers/iser/2010–20

8. Making use of survey data requires skills in quantitative methods (QM). The ESRC are aware of capacity needs around quantitative skills, and have put in place a range of measures to address them. Our *Doctoral Training Centres* (DTCs) have a number of studentships annually ring-fenced (or "steered") for Advanced Quantitative Methods (AQM) and economics (including behavioural economics). In both years of the DTCs' operation, this target has been exceeded.

9. In order to improve the "pipeline" issue of QM-skilled postgraduates coming through, ESRC have partnered with HEFCE and the Nuffield Foundation in a call for Centres of Excellence in Undergraduate Quantitative Methods, to fund undergraduate QM teaching. ESRC have previously funded smaller-scale activities at the undergraduate level with HEFCE—but this Centres Call is designed to impart a step change in this area. The Funders set out the Call to be permissive and encourage innovative applications, including ideas such as a 3+1 undergraduate degree model and discipline-embedded quantitative methods degrees.

10. ESRC has already considered work to link the area of natural capital and subjective wellbeing—at present, other than several awards through responsive mode schemes, this is an under-resourced area. Plans are underway to encourage work in this area.

13 June 2013

Written evidence submitted by New Approaches Community Interest Company

I am writing from an organisation called New Approaches CIC. We are a social enterprise specialising in happiness and wellbeing and enabling positive social change.

We use positive psychology, community engagement, research, project methodologies and offer our services to businesses, Councils, community and social enterprise sector, schools and families. Our values include ones of social inclusion ensuring that our work reaches people who are potentially vulnerable, involving communities in facilitating their own solutions and reinvesting profits with a particular focus on children in care and people in poverty. We also believe that happiness and wellbeing are at the heart of all positive social change. We use evidence based and researched methods as well as building our own research and measuring our own social value.

We are using the emerging field of positive psychology which studies how we can live well, be the best we can be and make the most of our lives. Positive Psychology includes areas such as the development of human strengths, building optimism, hope and resilience, increasing positive emotions such as joy and gratitude, mindfulness, the journey of change and happiness, wellbeing and flourishing.

Summary of Key Points

- The Wellbeing Inquiry need to consider Positive Psychology Research in building a national wellbeing strategy which research indicates will reduce mental illness, improve mental and physical health.
- There needs to be less focus on academic targets in schools and more focus on communication, resilience, strengths, hopeful and optimistic thinking and wellbeing.

— There needs to be support for organisations to measure wellbeing and many public sector orgnaisations lack the expertise.

— The data on the four ONS wellbeing questions on “happy yesterday” and “anxious yesterday” seems to contradict each other and difficult to know how to translate findings.

— Support for organisations especially Social Enterprise and Voluntary Sector (VCSE) to promote good mental health—reduce bureaucracy in local Council tender processes so that they are more accessible to Social Enterprise, small businesses and Voluntary Sector.

— There needs to be a clear national wellbeing strategy with focus on research to show how the 10 domains are associated with each other eg how employment impacts on subjective wellbeing and wellbeing on employment.

— Housing Associations have a significant role to play in supporting community wellbeing and businesses and public sector can work together to use positive psychology in business and the community as part of CSR plans.

— The research on strengths and positive emotions (Fredricksen’s Broaden and Build Theory for example) shows how Positive Psychology can lead to increased social and human capital.

Introduction about New Approaches and Georgina Clarke

Georgina Clarke set up New Approaches in 2008 with an aim of positive social change. The company transformed into a CIC in June 2013 with a focus on Positive Social Change and Happiness and Wellbeing, using Positive Psychology as a primary tool, and offering training, projects, research and business consultancy. We have five Directors and work in partnership with a number of organisations including Bucks New Uni, where three of our Directors have completed the first year of an MsC in Applied Positive Psychology. Our fourth Director runs a community social enterprise research organization, Iceberg Research, as well as a Social Enterprise to empower and train up homeless people and has a PHD in Social Science. Other organisations we work in partnership with are Action for Happiness, Positive Psychology Resource Centre, NLP4Kids. Our work is mainly commissioned by Councils, Schools, Charities and Government organisations.

Full Set of Recommendations and Comments

Below please find the comments of New Approaches CIC in response to the questions asked by the Wellbeing Inquiry including policy that the government should open up as a result of the wellbeing measures and findings.

— There is a growing body of research around the effectiveness and impact of Positive Psychology including the work of Fredricksen, Ryff, Keyes, Linley, Seligman, Peterson and Proctor. The research includes findings that Positive Psychology interventions such as building resilience, applying strengths led ways of working, increasing positive emotions (including mindfulness) leads to improved health, better productivity at work, better academic results, improved life satisfaction and reduced negative outcomes such as substance misuse and anti-social behavior.

— While we think it is reassuring that the government is prioritizing wellbeing to such an extent, we at New Approaches feel that more work is needed to improve the wellbeing of the nation and don’t think that there is currently a clear national and local strategy for improving emotional wellbeing.

— The data outlined on page 32 of the most recent ONS Measuring Wellbeing Report indicates that 71.1% of the population were “happy yesterday” and 60.1% anxious yesterday. How can we understand these sets of data more—are people happily anxious or anxiously happy? What does the data tell us and what do we need to do? We think more research and debate is needed to respond to these statistics.

— Keyes (2010) outlined the presence of mental disorders as being associated with the presence of multiple chronic physical disorders and also the link between reduced mental health and mental disorders. He also described how flourishing individuals report the lowest prevalence of mental disorders. So we feel the government should start to help people to flourish which will then support preventative agenda around reducing mental illness and improving peoples physical health and so will save the NHS money.

— The government in our view, should support organisations and individuals who are passionate about preventing suicides, self-harm, poor mental health—there was a sad BBC article this week with some alarming statistics quoted—http://www.bbc.co.uk/news/magazine-22854301#—13% of 16 year olds have self harmed, the most common type of death for 17 to 34 year olds is suicide. Dick Moore asks why as we do. We need to work together with government on these issues and the governments commissioning process needs to enable organisations such as small businesses, social enteprise and the voluntary sector to help.

- We feel particularly in schools there is not enough focus on wellbeing or sufficient understanding by schools that increasing wellbeing is vital to influencing other outcomes such as academic attainment. For instance the government is investing heavily in Pupil Premium and Narrowing the Gap but there seems to be limited understanding by local Councils of the contributing factors to narrowing the achievement gap or the link to wellbeing. There are some Councils who are trailblazing such as Islington who have designed their commissioning outcomes for young people on wellbeing principles and outcomes.

- Research indicates that by investing in children's emotional health, building their resilience and communication skills, and supporting them to understand their strengths leads to greater success at school. Proctor et al (2011) in their paper Very Happy Youths found that interventions focusing on Positive Psychology with a range of young people, had the greatest impact on very unhappy youths and led to other improved outcomes such as better academic success.

- We feel that Ofsted and the Department of Education need to be inspecting how schools measure wellbeing and how investment in wellbeing impacts on wider outcomes for the children. With the introduction of the Social Value Act 2012, which puts a duty on Councils to measure and commission based on social value, we feel that the government should then be encouraging all statutory organisations to measure social value. Our experience is that sometimes schools and Councils do not have the expertise to measure change effectively.

- We feel that the government needs to invest in social enterprises and the voluntary sector to undertake wellbeing initiatives with people and evidence the change. The tender system is currently not conducive to small businesses and is a barrier to growth for the VCSE sector.

- We feel that it is reassuring that the latest Measuring National Wellbeing ONS report outlined interaction between domains such as What we Do and Subjective Wellbeing by projects such as the work with jobseekers tracking their wellbeing. We feel that there needs to be more linkages between each domain and subjective wellbeing. So for instance measuring how subjective wellbeing impacts on domain outcomes like employment, education, health and how the domain outcomes impact on the Subjective Wellbeing domain.

- We feel that although the data and wheel of measures are helpful, that qualitative research and more quantitative research would be helpful to understand more about the relationship between outcomes and subjective wellbeing. We would like to see Positive Psychology interventions measured to see how they increase peoples wellbeing and also how this increase in wellbeing leads to an impact on other domain outcomes. So in schools, how an increase in wellbeing leads to reduced bullying, improved academic attainment, reduced truancy etc.

- We feel that the evidence based research tools for measuring wellbeing should be considered and that organisations should be encouraged and trained to use these. Measures such as Carol Ryff's six measures of wellbeing including areas such as quality ties to others which ties into the government's aim to increase social capital. At New Approaches we are looking to use tools such as Ryff's six measures within our wellbeing interventions to identify changes and also include qualitative and participatory action research. We feel social enterprise, voluntary and statutory sector should be supported and trained to use these tools effectively and gather data to identify what has worked perhaps in the new What Works Centres.

- We feel that wellbeing initiatives should be targeted and measured through initiatives such as Troubled Families and reach the most vulnerable groups in society.

- We feel that Positive Psychology interventions can support people in both Public and Private sector and that initiatives should seek opportunities to involve both. So for instance we are currently working with Ways into Work who support people with disabilities into work. They are employed by the Council but their clients are people with disabilities and Private employers. Based on the research on strengths based recruitment and application in the workplace, interventions such as strengths led recruitment can help to change employers mindsets about recruitment which in turn will encourage them to be more inclusive.

- We feel that Housing Associations have a significant role to play in increasing peoples wellbeing and often access vulnerable people and families. We would like more responsibility and funding directed to Housing Associations to introduce both innovative and evidence based initiatives to increase wellbeing and to be supported to measure social value.

- We would like to see Ofsted and inspectors measuring success of Councils, Children's Centres, Schools on how well they measure wellbeing and its impact on other outcomes and it should be present in all organizational strategies such as child poverty, inclusion, school improvement, narrowing the gap, adult social care, parks and countryside etc. It could be linked to inspections to see how well Councils and organisations deliver multi agency and joined up approaches to commissioning and partnerships.

- The ONS and government describe wellbeing as comprising four capitals. Research shows that Positive Psychology initiatives impact on both social and human capital. For instance Fredricksen's Broaden and Build theory shows how building positive emotions such as joy and gratitude and love and kindness builds our long term resources and supports better relationships and interactions such as social, psychological and physical resources.
- The strengths research shows how by identifying peoples strengths and setting goals that play to their strengths creates skills and knowledge and competencies being put to better use and leads to better motivation of workforces or pupils/students and improved productivity and results. So these approaches therefore support the increase in human capital.

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13 June 2013

Written evidence submitted by the Woodland Trust

1. Background

1.1 The Woodland Trust is the UK's leading woodland conservation charity championing native woods and trees. It has more than 500,000 members and supporters and its three key aims are: i) to enable the creation of more native woods and places rich in trees ii) to protect native woods, trees and their wildlife for the future iii) to inspire everyone to enjoy and value woods and trees. Established in 1972, the Woodland Trust now has over 1,200 sites in its care covering approximately 20,000 hectares (50,000 acres). Access to all Woodland Trust sites is free.

1.2 We warmly welcome this important inquiry and the opportunity to submit evidence.

1.3 Our evidence focuses on one key point of the brief:

- How the ONS work might be further expanded and adjusted to reflect well being research and the metrics being developed elsewhere.

2. The need for an Access Indicator

2.1 One of the more prominent concerns in the initial public survey carried out by ONS was around the quality of, and access to, the local environment but this has not featured in the final suite of indicators—largely, we understand, because of concerns around data availability. There is instead an indicator on the number of times people have accessed the natural environment. Whilst welcome, this does not address the quality of people's everyday surroundings.

2.2 We believe that the Woods for People dataset could fulfil this role.

2.3 This is a project between Woodland Trust, Forestry Commission and Environment and Heritage Service (NI). It involves the maintenance of an inventory of accessible woodland across the UK. The Woodland Trust's "Space for People" project draws on this, analysing the extent of access across the UK at present and has developed targets for accessible woodland close to where people live through the Woodland Access Standard.

2.4 The data has been collected and updated annually since 2002 so we believe it to be accurate. Linkage with the popular VisitWoods project also means that there is additional information from members of the public which is improving and refining the data. The Woodland Access Standard was adopted by the Forestry

Commission as a key corporate indicator so is already in use by statutory agencies. It has also been embraced in a number of Local Development Frameworks/Green Infrastructure Strategies across the country.

3. The Policy Case

3.1 The growing body of evidence pointing to the range of well-being benefits from accessible green space reinforces the case that such a measure should be included.

3.2 Benefits from woodland close to where people live include:

— Encouraging people to take exercise.
— Helping reduce the mental stresses of modern society.
— Improving air quality.
— Reducing respiratory diseases.

3.3 This is reinforced by the Public Health White Paper, *Healthy Lives, Healthy People*, which states (p40) that: "Access to green spaces is associated with better mental and physical health across socio-economic groups".

3.4 The Natural Environment White Paper, *The Natural Choice: securing the value of nature* (HM Government, July 2011, paras 4.5–4.13) notes the evidence which shows that: "A good-quality environment is associated with a decrease in problems such as high blood pressure and high cholesterol. It is also linked with better mental health, reduced stress and more physical activity. If every household in England were provided with access to quality green space, an estimated £2.1 billion in healthcare costs could be saved. On the other hand, a poor local natural environment can damage people's health and contribute to health inequalities. For example, the social costs of the impacts of air pollution are estimated at £16 billion per year in the UK".

3.5 We believe that, given such evidence, the available dataset we have highlighted, and the public response to the original survey, the Government ought to be prioritising the measurement of access and using the Woods for People dataset to inform a well-being indicator.

14 June 2013

Written evidence submitted by The Academy of Social Sciences

1.1 The Academy of Social Sciences welcomes the opportunity to respond to the Environmental Audit Committee (EAC) Inquiry on Well-being.

1.2 The Academy of Social Sciences is the UK's national academy for social sciences, and counts 46 of the social science Learned Societies and over 900 peer-elected social scientists amongst its membership. Our membership includes both research-active academics in Universities and wider communities of professional and applied researchers in the social sciences. We have organised our response under the headings provided by the Committee.

— *The Government's plans to utilise the results of the available well-being research and analysis in policy making.*

2.1 The Academy of Social Sciences welcomes the Government's work in the field of well-being and its willingness to incorporate well-being perspectives into policymaking, and to see well-being as a goal of social progress. The ONS work on well-being has enabled robust measurement of well-being at a national level in the UK for the first time.

2.2 Well-being is a complex concept, with many dimensions. We support a holistic view of well-being that emerges from the research literature, showing that wellbeing is more than the absence of illness or pathology. It has subjective (self-assessed) and objective (ascribed) dimensions and can be measured at the level of individuals or society.

2.3 The ONS measures of subjective well-being currently concentrate on measures of life satisfaction and reported levels of (respectively) happiness and anxiety yesterday. Given the importance in psychological definitions of well-being of accounting for negative as well as positive affect, *it may be beneficial to look to develop an indicator of unhappiness/low mood* as well, as anxiety is only one aspect of negative mood affecting our levels of well-being and mental health.

2.4 Whilst the current measures also include an item on the extent to which respondents see their lives as worthwhile, there is a growing consensus that measures of engagement are important to overall well-being and to a sense of fulfilment. This engagement includes personal, social and community relationships and its importance is underlined by the association frequently found between participation in relationships and community activities and levels of well-being for individuals and for societies. *In light of this, we endorse the suggestion in the Committee's report on Sustainable Development Indicators that proposed social capital indicators may include:*

> *"sense of belonging", "trusting neighbours", "neighbourliness", "volunteering and other community participation", "influencing local decisions", "feeling safe" and "mixing socially"*

(HC 667, 2012:14)

2.5 We note that the EAC inquiry starts from a point of view that *"Well-being comprises four "capitals"—natural capital, produced capital, human capital and social capital"*. This is only one (economistic) view of the nature of well-being and its constituents—other views in the social sciences may see well-being more as a "flow" concept, moving through time and social space, rather than a static "stock" resource. Economic perspectives may characterise well-being as arising from services that flow from stocks of capital—a notion that has expanded beyond physical and financial stocks to include natural, social and human capital stocks: eg services flowing from human capital (education, skills); services deriving from measures of social capital (such as connectedness, cohesion and participation). *We encourage the Committee to attend to these wider and more dynamic versions of capital in considering well-being and policy*—as is already being done to some extent in the work of the Natural Capital Committee.

2.6 We draw the Committee's attention to the well-being research carried out by social scientists throughout the UK to enrich the work carried out by ONS. Resources such as the Understanding Society data, housed at the University of Essex, and the recent reports of the Joseph Rowntree Foundation (both outlined in more detail below) provide valuable insights into the nature and experience of well-being in Britain today.

— *What the Government is doing to get the right analytical skills and training (including social science skills), to reflect well-being thinking and to address all aspects of sustainable development; and how in practical terms to make such an approach operational in departments' policy-making processes.*

3.1 "Well-being thinking" is interdisciplinary by nature, bringing together economics, quantitative and qualitative social research, environmental science and ecology and psychology—among other social and natural sciences. *The Government's support of interdisciplinary research funding under cross-cutting themes is likely to produce findings relevant to well-being research and policy,* and to foster the cross-subject collaboration likely to nurture the skills and approaches to take the well-being agenda forward.

3.2 Civil service reform currently underway emphasises the need for civil servants to move more between departments and break down thinking silos in policymaking. This is relevant to the well-being agenda which spans the work of many Departments, including Defra, DCLG, Health, and DWP. Bob Kerslake has talked recently of the importance of policy being formulated interdepartmentally where appropriate, with various Departments coming together to "organise around the problem". *Measuring, nurturing and enhancing levels of well-being are an inter-departmental challenge, which may benefit from such an approach.*

3.2 Well-being research rests on a set of quantitative subjective and objective indicators, and statistical analysis to map associations between dimensions of well-being and a range of variables. *Most social scientists gain quantitative skills through Masters degrees, which are not often publicly-funded.* The Academy is keeping a watching brief on the issues raised by this lack of funding, both for the "pipeline" of skilled social scientists coming into employment, and around inequalities of access to Masters training, between students from advantaged and disadvantaged backgrounds.

— *What particular areas of policy making the Government should now open up to the results of the well-being analysis and research, and on which areas of policy-making it should exercise caution.*

4.1 *We recommend that policymaking related to community capacity building and regeneration should be opened up to the results of well-being research.* Participation in society is so important to positive well-being and levels of trust, that the flow of social and human capital into and out of deprived areas should be mapped and understood, alongside economic cost-benefit analysis related to specific projects and investments.

4.2 Recent research by the Joseph Rowntree Foundation (*Poverty, Participation and Choice: the legacy of Peter Townsend* (2013) Ferragina, E Tomlison, M and Robert Walker York: JRF) indicates that a third of Britons don't have the resources to participate fully in society. This report draws on a long tradition from sociology understanding poverty in a rounded sense (from Peter Townsend's groundbreaking report on poverty in the 1970s). The poorest 30% participate less in social relationships, cultural activities and membership of organisations and have lower levels of trust in others, as well as possessing fewer material goods. *The non-economic aspects of poverty highlighted here are related to the calls for a more holistic sense of well-being, and draw attention to questions of equity and social justice. There is scope for the ONS work on well-being to explore these matters more fully.*

4.3 There are strong arguments not only that the poorest in society suffer adverse well-being effects in themselves, but also that more unequal societies suffer from lower wellbeing as a whole. This view is summarised by Richard Wilkinson and Kate Pickett (2009) in their influential book *"The Spirit Level*". They argue that:

> *"It is clear that greater equality, as well as improving the wellbeing of the whole population, is also key to national standards of achievement and how countries perform in lots of different fields …If you want to know why one country does better or worse that another, the first thing to look at is the extent of inequality. There is not one policy for reducing inequality in health or the educational performance of school children, and another for raising national standards of performance. Reducing inequality is the best way of doing both" (Wilkinson and Pickett (2009): 29–30)*

4.4 The gap in income between the richest and poorest in society has been rising in recent decades in the UK, resulting in an increasingly unequal society. This may be reflected in a growing well-being gap with implications for the effectiveness of government policies. The importance of (in)equality in ongoing work on well-being and sustainable development was recognised in the EAC's recent report on developing further indicators: *"Equality is at the heart of the Society pillar of sustainable development, but it is not given sufficient coverage in the proposed SDIs to provide a basis for policy-making to narrow inequalities."* (HCC 667: 15). *We encourage the Committee to continue to advocate for the importance of indicators of equality.*

4.5 Whilst personal and social relationships are key to well-being, Government prescriptions in such areas are often unpopular. People tend to prefer to make private choices to, for example, marry or engage in volunteer work, rather than do so by Government edict. *Policies in such areas must therefore be sensitive to issues of autonomy, democracy and trust—all important factors in well-being in themselves.*

— *How the ONS work might be further expanded or adjusted to reflect well-being research and metrics being developed elsewhere.*

5.1 The work of the ONS on well-being is supported, informed and subject to challenge through robust, independent data on wellbeing. *Independent sources such as Understanding Society and the birth cohort studies therefore warrant continued investment and support.* It may be possible to develop indicators of well-being retrospectively from existing datasets, enhancing our ability to examine changes in well-being over time, and the relative importance of various determinants.

5.2 *ONS's own data on well-being could be made more accessible through improvements to the website*. This would ensure that it reached the widest possible audience, and encourage dialogue between Government and independent researchers in this area.

— *What lessons for considering social and human capital in national statistics reporting and policy making could be drawn from the separate work already under way on natural capital, including the operation of the Natural Capital Committee.*

6.1 The Natural Capital Committee (NCC) works to better measure and account for changes in natural capital assets and to feed this knowledge into policymaking. We feel that *there is a good case to establish a similar Social and Human Capital Committee*, bringing insights directly to bear on policy decisions. A Social and Human Capital Committee could work to complement our understandings of economic success and economic determinants of well-being, with a socially-based well-being perspective. This would enable us to answer better questions such as "what would policy look like if individual and societal well-being were our focus, rather than GDP?"

6.2. The EAC's report on Sustainable Development Indicators has drawn attention to the importance of aiming to integrate well-being and environmental indicators into a holistic view of sustainable development for growth. The NCC's *State of Natural Capital* report states that: *"In order to promote sustainable growth, all forms of capital (natural, human, social and manufactured) need to be properly maintained and where appropriate, enhanced"* (page 8).Therefore *social and human capital deserve to be put at the heart of policy and viewed as integral to plans for growth.*

14 June 2013

Written evidence submitted by the British Psychological Society

The British Psychological Society, incorporated by Royal Charter, is the learned and professional body for psychology and psychologists in the United Kingdom. We are a registered charity with a total membership of just over 50,000.

Under its Royal Charter, the objective of the British Psychological Society is "to promote the advancement and diffusion of the knowledge of psychology pure and applied and especially to promote the efficiency and usefulness of members by setting up a high standard of professional education and knowledge". We are committed to providing and disseminating evidence-based expertise and advice, engaging with policy and decision makers, and promoting the highest standards in learning and teaching, professional practice and research.

The British Psychological Society is an examining body granting certificates and diplomas in specialist areas of professional applied psychology

1. Introduction

1.1 The Society warmly welcomes the Government's decision to make well-being a key element of Government strategy. This stance is clearly one that has enormous support across scientific and academic disciplines, across civil society more generally, and internationally.

1.2 The Society and its members are active supporters of both the Office for National Statistics' efforts to analyze relevant data and the Government's efforts to implement the relevant results in policy-making.

1.3 The Society supports the broad thrust of the emergent strategy from the ONS although we would welcome greater clarity as to how this strategy, and the data generated, are to be implemented in each Government Department. Specifically, we would recommend—that each Department has a devolved departmental strategy to implement the well-being agenda, an identified lead official with strong links to the ONS. The Society also recommends that each Department consider the appointment of an appropriately qualified professional to advise on how well-being could be prioritized in each Department.

1.4 In summary, the Society:

— Supports the Government's plans to utilise the results of well-being research and analysis in policy making.
— Beieves well-being is a multi-dimensional construct that must be measured using multiple items.
— Believes the work of ONS could be developed to look at the causal and functional functional relationships of well-being.
— Believes the current measurement strategy of the ONS is limited and should be expanded in scope.
— Believes greater involvement of those with relevant expertise is necessary.

2. The Government's Plans to Utilise the Results of the Available Well-being Research and Analysis in Policy Making

2.1 The Society is supportive of the Government's plans to utilise well-being research and analysis in policy making. However, we believe that it is important to move away from a purely GDP measure of success in policy making and implementation. Well-being is a multi-dimensional construct and must therefore be measured using multiple items.

2.2 The Society believes that the work of the ONS could usefully be developed to look at the causal and functional relationship between elements of well-being. Well-being includes both feeling good and functioning well (ie perception of how well one is functioning). There is general agreement that a well-being measure needs to cover hedonic well-being (feeling good), eudaimonic well-being (functioning well) and overall evaluation (usually measured in terms of life satisfaction). A well-being measure also needs to consider objective factors (such as housing quality, income, access to green spaces etc) on the one hand, and possible consequences of high and low well-being (prevalence of mental health problems, employment days lost to illness, etc). These relationships are complex, but it is important to understand them, to better design potential policies.

2.3 The Society believes all parts of central and local Government should support, in their policy making, the enhancement of well-being. Well-being should be seen both as an over-arching aim of Government and each element of civic society has a role to play in protecting and enhancing well-being. Caution is always wise in policy-making when, as in this area, multiple factors interact in complex (and sometimes unexpected) ways, but that argues for greater communication between agencies (perhaps coordinated by the Cabinet Office).

2.4 We believe that well-being is a matter for all agencies of Government. In Whitehall, this speaks to the role of the Cabinet Office in setting strategic goals and monitoring Departmental progress towards targets. In local government, well-being is now a key role for the newly-established Health and Well-Being Boards (established under Statute law in each higher-tier local authority). Some consideration should be given to how these Boards could both develop and coordinate their strategies.

2.5 Psychologists work across many Government agencies—in the armed forces, in mental health services and physical health services, in education and in the criminal justice services and in support for employers and employees. The Society welcomes the emphasis on occupational health services but stresses that occupational psychology should be seen as a service that can prevent the development of mental health problems as well as ameliorate them. Occupational Psychology can also promote positive well-being (with all the consequent benefits to the UK economy as well as individuals). These considerations—amelioration of problems, preventative work and the promotion of positive well-being—apply equally to all domains of psychological practice; in clinical and counselling psychology, in health psychology, educational psychology and forensic psychology as well as occupational psychology.

2.6 Psychologists have expertise in behaviour-change, not only in health and mental health, but more widely. This applies to individual, family, group, organisation and society-wide interventions, as well as skills areas as diverse as resilience training, management and leadership development, job and organisation design as well as measurement and even therapy. The Society therefore welcomes discussion of a multi-disciplinary portal to include other professions in a new Occupational Health Service.

3. What the Government is doing to get the Right Analytical Skills and Training (including Social Science Skills), to Reflect Well-being thinking and to Address all Aspects of Sustainable Development; and how in Practical terms to make such an Approach Operational in Departments' Policy-making Processes

3.1 From a psychological perspective, well-being is understood as a multi-dimensional and multi-faceted construct and it must therefore be measured using multiple items.

3.2 In addition, psychologists understand that people actively evaluate (hence well-being possessing an additional evaluative element) objective aspects of their lives—their income, access to health services, environmental quality. This implies that well-being, from a governmental or policy perspective also comprises an element of objective indicators. As such, the current measurement strategy developed by ONS is a good start—as it contains elements of each facet. It appears to lack, however, a strategic or thematic structure—these elements are included on what looks to be a somewhat ad hoc basis.

3.3 We believe that the four key questions currently used by the ONS to measure subjective well-being represent a positive start, but are very limited in their coverage of the construct. They currently only measure overall subjective evaluation (life satisfaction), feelings (happiness and anxiety), and a single question about functioning/eudaimonic well-being, namely the extent to which people think that what they do is worthwhile. We believe the ONS questions need to be extended to cover other key elements of functioning, including engagement, optimism, self-esteem, positive relationships, etc.

3.4 The Society recognises that there are very real practical constraints, and that there is a great benefit from consistency of practice both nationally and internationally. Research has suggested robust frameworks for the definition of well-being, for example, Huppert FA, So TCC (2011), "Flourishing across Europe: application of a new conceptual framework for defining well-being." Social Indicators Research has developed and validated specific measures of well-being, most notably the Warwick-Edinburgh Mental Well-being Scale (WEMWBS). This has been given serious consideration by the ONS Technical Advisory Group on Measuring National Well-being. Other measures such as the BBC Well-Being Scale also have good psychometric properties.

3.5 In order to reflect wellbeing thinking in policy-making processes, the Government should include psychology-based evidence around wellbeing and include those with wellbeing expertise in its policy-making processes. This could be done through a number of routes:

- Ensure that psychology evidence about wellbeing is brought to bear when making policy decisions—perhaps by having a default question for policy-making decision processes to consider whether wellbeing has been fully considered.
- Provide learning and development for policy-makers on psychology and wellbeing as a standard part of their professional development.
- Bring in external experts to provide evidence around wellbeing during the policy-making process.
- Consult actively and specifically with experts to provide input on relevant wellbeing considerations during the policy-making process.
- Include experts in the teams working on new policy initiatives and on policy implementation.

4. What Particular Areas of Policy making the Government should now open up to the Results of the Well-being Analysis and Research, and on which Areas of Policy-making it should Exercise Caution

4.1 The Society believes that a particular area of policy making the Government should open up is in relation to employment and workplaces: There is an enormous amount of evidence about wellbeing in the workplace and in relation to work; this includes a well-developed understanding of the work-related drivers of wellbeing, both in terms of how work and workplace issues can enhance wellbeing and in terms of the ways in which workplace issues can reduce employee wellbeing. Many of the areas covered by the Department of Business, Innovation and Skills (BIS) and the Department for Work and Pensions (DWP) have links to wellbeing and policy-making in these domains and could therefore benefit from considering wellbeing, for example:

- people management and leadership;
- working hours;
- flexible working;
- skills strategies; and
- stress prevention and managing mental health in the workplace (see NICE guidance).

5. How the ONS work might be further Expanded or Adjusted to Reflect Well-being Research and Metrics being Developed Elsewhere

5.1 The Society believes the four ONS subjective well-being questions represent a promising start, but are very limited in their coverage of the construct. They only measure evaluation (life satisfaction), feelings (happiness and anxiety), and a single question about functioning/eudaimonic well-being, namely the extent to which people think that what they do is worthwhile.

5.2 We believe that the ONS questions should be extended to cover other key elements of functioning, including engagement, optimism, self-esteem, positive relationships, etc. The ONS work to date has not given sufficient attention to the links between work and wellbeing. This element of their work could usefully be expanded to reflect the work of a range of psychologists and other social scientists who have been measuring workplace wellbeing and its links to other work-related factors.

5.3 For example, employment is currently included within the ONS "what we do" domain and the only measures are of whether people are in work and satisfied with their job. In addition to these areas, it would be advisable to explore other relevant aspects of work, for example: workplace and work-related factors that influence well-being (eg demands, respect, control/autonomy, support, relationships, bullying, role, change, justice, resources); and subjective work-related well-being—including, but not limited to, job satisfaction. This might require that additional questions be added to some of the current measures, though some of the information could be drawn from the existing Workplace Employment Relations Study (WERS) survey data.

6. What Lessons for Considering Social and Human Capital in National Statistics Reporting and Policy Making could be Drawn from the Separate Work already under way on Natural Capital, Including the Operation of the Natural Capital Committee

6.1. No comments

References

Huppert FA, So TCC (2011). "Flourishing across Europe: application of a new conceptual framework for defining well-being." *Social Indicators Research*

14 June 2013

Written evidence submitted by Colin Green, Flood Hazard Research Centre, Middlesex University

The Flood Hazard Research Centre at Middlesex University is an interdisciplinary research centre focused on the policy aspects of water management in the transition to sustainable water management. It has been part of numerous EC research projects in the past (eg SWITCH on sustainable urban water management; CONHAZ on the costs of natural hazards). Current EC FP7 projects include: WeSenseIT (a citizen's observatory for water); EPIWATER (the use of economic instruments for water management) and STAR-FLOOD (governance and flood risk management). We have also prepared reports for the OECD (the barriers against and incentives for the adoption of green water infrastructure) and the UN Water Decade (on green water infrastructure). Colin Green is Professor of Water Economics.

Introduction

Humanity has to live on this planet for the indefinite future. It is a fossil planet, the only new resources that there will ever be are solar and gravitational energy; everything else, the chemical elements, is already here. Some of those resources are already scarce as identified in the reports of the US Geological Survey. In the short term, we have the advantage of the inheritance of the equivalent of thousands of earths: the complex carbon compounds, created over millennia through biological and botanical processes driven by solar energy, compressed by geological action, and left for use as chemical feedstocks or for fossil fuels. But in the longer term, we have to do more with less; we have to make change to a green economy. We have to do this in the face of change, most obviously climate change. But climate change simply requires us to make the changes we will have to make anyway: at some point, oil, gas and coal will be more valuable as chemical feedstocks than for energy production.

Doing more with less raises the obvious questions of:

- More "what"?
- Less "what"?
- How do we do it?

The more "what" question is, following the Stiglitz Commission, being answered in terms of "well-being" and the less "what" questions in terms of the sustainable uses of resources, and the valuation of environmental services. A technical problem here is that to the extent to which a proportion of the current well-being is unpriced, and another proportion of the resources used to produce that well-being is also unpriced, the prices of all marketed goods and consumption are distorted. Given that without the environment, there is no economy, the relationship between the economy and the environment being as the leaf to the tree, we have to be cautious in using the leaf to value the tree.

The practical problem is the "how" question: how can we greatly improve the efficiency with which we deliver well-being within the capacity of the planet. The ultimate limits on the "how" question are set by the laws of physics, chemistry and ecology. For example, Liebig's Law states that crop yields are determined by the least available of the essential plant nutrients. We can approach nearer and nearer to these limits but they cannot be breached. What can be achieved at any one time is then set by the state of technology; for instance, the energy required to produce nitrogen fertilisers has, over the last one hundred years, fallen until, with the technology processes currently available, it is close to the technological limit.

But, fortunately, actual practice typically falls well below what is technically obtainable at a given state of technological knowledge. For example, Envirowise reported that industry and commerce could reduce water consumption per £ output by 30% whilst increasing profitability. There are multiple reasons why resources are not currently being used efficiently, these reasons have been identified by such researchers as Simon, Rees, Stiglitz and Coase. That we are not currently on the technological frontier offers immediate scope for acting to improve efficiency.

Questions

Seeking sustainable development raises new questions on top of those old questions, questions to which we still have inadequate answers. Three of those old questions are:

- How does development occur?
- How does change more generally occur and how can it be induced?
- What is capital?

Development

For the past 150 years, a concern of UK governments has been the UK's relative economic decline and hence the desirability of increasing relative economic growth. Success has not been notable. If we have not been successful in developing a strategy for economic growth, we start in a poor position to develop a strategy for sustainable development.

Change

Development is a specific form of change; other key processes of change are adaptation, learning, innovation, and changing the behaviour of consumers and others. Understanding the processes through which and by which change occurs and can be induced is critical. The other side of the problem is to understand why changes has not or does not occur.

Capital

An increasing range of things (eg natural capital, social capital) are now termed "capital" in order to both stress their importance and to emphasise that they need to be used wisely. But the use of the term "capital" implies both commonalities that may not exist and a degree of substitution between forms of "capital" that may not be possible. "Money capital" produces a return income, interest, that does not reduce the capital sum. Taking a higher income than the true interest on the capital depletes the capital but it can also be replenished by diverting income into savings. Conversely, it has been argued that social capital is produced by being used and that use of social capital is neither a form of income nor a drain on capital. What we mean by capital and whether the different things we call capital are substitutes, complements or antagonists are all open questions.

What is to be done in the short run?

Indicators

The value of any indicator is what you can do from them; the analytical meaning of the indicator either or both in prospective or retrospective terms. The value of an indicator is indicating what will work or what will not work, and has or has not worked: they need to be action orientated. In turn, whilst numbers are succinct means of summarising understanding, it is that understanding which gives meaning to the numbers. Since it is the understanding that matters, it is better to be roughly right rather than precisely wrong and, equally, to avoid adopting an indicator simply because the statistics are readily available.

For analytical purposes, indicators have to be comparative; able to identify changes over time, relative to other countries, and in consequence of different courses of action. This often means that it must be possible to look at disaggregated figures or to drill down from the aggregated figures. It is little use having figures for the "chemical industry" SIC when there are 148,000 chemical compounds registered for use in the EU and many of those compounds are precursors for other chemical compounds. Piecemeal statistics may then be much more useful than grand aggregates; for example, the statistics on water usage in different parts of the textile industry produced by the Envirowise programme are much more useful than the grand SIC averages of water usage per unit output produced by the German national office of statistics. Perhaps the greatest value of aggregate data is to identify where it is most useful to have more detailed data: where investment in better data will produce the biggest gains.

It may be useful to reflect upon what statistics we seek in attempting to analysis how a shock such as a flood or drought propagates through an economy and how an economy may then recover from that shock: how resilience may be promoted. The old statistical data, notably GDP, is of little use partly because it is too highly aggregated both in area and also in sectors. Similarly, input-output tables never lived up to their promise because, again, they are too aggregated but also because they describe a state when the problem is to understand the dynamics. "Old" data that is useful include household expenditure breakdowns and the IMF data on the breakdown of revenue for governmental units in different countries.

But it is the "new" statistical data, that which has only recently started to be compiled, that is most relevant. We are starting to get data specifically on SMEs (which constitute roughly half economic activity). In the UK, and a few other countries, statistical estimates (based upon rather a lot of assumptions) have started to become available on net physical assets. Recently, the UK trialled the development of statistics on household wealth and assets. In terms of the effects of a flood, this starts to provide a basis for examining how a household can recover from a flood, what savings and other resources it has available and hence which households will recover most rapidly and by what means. But as the OECD data shows, the forms, and hence liquidity, of savings varies widely between different countries.

More generally, we need to be clear whether we are measuring inputs, outputs or efficiency; the ratio of one or more outputs to one or more inputs.

The really difficult things are those that appear simultaneously be both output measures and to contribute to efficiency. For example, social capital is frequently considered to both contribute to efficiency and to be a contributor to well-being, an output measure. These things often also involve the junction of utilitarian questions and moral issues. For example, if people are asked what are their values, the response, after a long pause, is normally in terms of those principles that they consider either do or should govern their actions; what are the moral, ethical or religious principles that should be adopted. The latter in particular are also frequently specified in terms of social relationships; from “my family” through to democracy or justice. Here, there are a whole series of intertwined concepts that are difficult to define, let alone measure (eg trust, legitimacy, justice). As the term “relationships” implies, it often appears that what is at issue is a dynamic rather than a state: it is, however, easier to report, in statistical terms, a state rather than a dynamic.

Actions

Statistics are useful in so far as they are action orientated. A practical problem is then decisions about actions can depend upon time series data so statistics can need to start to be collected before there is a clear need for that data. But initial driver for collecting statistics is what actions might be taken on the basis of that information. In doing more with less, the obvious starting point is to drive out existing inefficiencies, to get closer to the current technological frontier. For example, England has been said to be twenty years behind Germany in terms of sustainable urban water management. Similarly, the 2030 Water Resources Group argue that a large part of the growth they predict in water requirements in India and China can be met by driving out inefficiencies. Whilst they provide no evidence to support their argument, what other evidence is available means that their argument is not unreasonable.

Once the current technological frontier is approached, the problem is to push the technological frontier outwards until it reaches the limits imposed by the laws of physics, chemistry and ecology.

The immediate problem is therefore to drive out inefficiencies. This requires both identifying where and how large are these inefficiencies, and more especially why they occur and what in turn can be done about them. This implies that it is here attention should be focused in terms of indicators.

14 June 2013

Written evidenced submitted by the Royal Society for the Protection of Birds

Key Points

- Improving our understanding of, and ability to measure, human wellbeing is critical to better policy making.
- There is a distinction to be drawn between subjective approaches to measuring wellbeing and developing objective measures of underlying factors, like natural capital, which influence it. It is important to make progress on both.
- It must be acknowledged that this research is at a nascent stage. Whilst some benefits can be realized immediately the use and usefulness of these measures will improve over time and so a long-term commitment is essential.
- The UK Government is sponsoring or undertaking a range of related, but independent, initiatives related to wellbeing (eg the NEA, ONS, WAVES, BESS, VNN, NCC). It is important to ensure these efforts are coordinated to avoid duplication and to maximize synergies.
- Research motivated by environmental considerations (like the NEA, or NCC) is directly relevant to other areas of Government. It is important to involve and engage other Departments (HMT, ,DECC,CLG. BIS, DfE, Health) in this evolving, policy relevant work.
- The ONS requires more technical support in the proper interpretation of these new data.

The RSPB and Well-being

1. The RSPB is the UK charity working to secure a better environment for wildlife and people. We have extensive experience of bringing people together with the natural environment, contributing to the well-being of people and communities through various different means. In addition to a membership of over 1 million people there were almost two million visits to RSPB reserves in 2009 and in 2011 more than 600,000 people

took part in our Big Garden Bird Watch survey. These are just some examples of the RSPB's experience in enhancing wellbeing through connectedness with nature.

2. In terms of research activity, the RSPB has been at the forefront of Ecosystem Service related research. This centres on understanding the array of human benefits associated with the environment. This research is described and documented in our publication "Naturally: At your Service". A variety of staff have been involved, as authors and reviewers in both TEEB and NEA research. In addition to this, we have recently undertaken research, with the University of Essex, to articulate and measure childhood connection to nature. We have just completed a national baseline for the UK which will be published in July.

3. We primarily want to respond to this consultation to add support to the work which the ONS has been tasked with. We believe that this work should become critical evidence for better policy making. Attention to this subject has waned somewhat since the program was initially announced and we hope that a consequence of this consultation is to provide it with more momentum.

How to use the Results in Policy Making

4. Measuring subjective wellbeing is at an early stage. It will become more useful once we have data over a number of years and can identify trends. In time we expect to see more research which combines wellbeing measures with other data sets to help understand the factors underlying human welfare. The NEA is becoming a valuable source of spatial, environmental data, which, if combined with regional wellbeing measures, could be used to analyse sources of regional variation.

5. Recent years have seen rapid growth in our understanding of human benefits associated with the natural environment. The wellbeing benefits associated with health, educational, recreational or aesthetic attributes of engagement with nature are evident from research such as the NEA and expressed clearly in the Coalition's Natural Environment White Paper. The establishment of the NCC represents a major positive step in turning this understanding into policy. The NCC faces two major hurdles. The first is the need to have traction with current macroeconomic orthodoxy which is solely concerned with jobs and growth in the short term. The second is the complexity of Natural Capital itself. In relation to the first, the correct measure in economics is wellbeing (not money) but there is clearly a major job to be done to demonstrate the importance of natural capital to present and future economic prosperity. In relation to the second, ecological complexity is not amenable to spreadsheets and it will take time to modify existing, and develop new accounting frameworks to accommodate it. While we expect the NCC to measure certain aspects, or dimensions, of natural capital in the short term, it is fundamentally a long term endeavor. It is important to manage expectations to ensure NCC sponsors do not become discouraged by lack of progress and withdraw support. The usefulness and use of these measures will improve with time; long term commitment is essential.

6. Currently it is clear that all government departments are acutely mindful of their impacts upon growth as measured by GDP. It is also more commonly understood that GDP is an important economic parameter but not a measure of wellbeing. One of the reasons being that it is essentially an income measure and ignores stocks of wealth. A key ambition of the NCC must be to have gains and losses of environmental capital reported alongside GDP so that we know at what cost economic output was gained and so that we understand how sustainable, or otherwise, our economic performance is.

The need for Effective Communication

7. Both the launch of the wellbeing work and the announcement of the NCC received critical receptions in the press. It will be important for both initiatives to become better at communicating both their objectives and their findings. We believe the EAC and other Westminster based cross party committees or groups (APPG on Biodiversity) can play an important role in ensuring these initiatives retain cross party support.

Better Interpretive Support for the ONS

8. The Office for National Statistics is a statistical office and is well placed to gather data. It is not always as well placed to interpret these data. For instance—a "key point" chosen by the ONS in its Natural Environment[3] report was that, "The population of the wild birds in the UK has remained relatively stable between 1970 and 2010". This is a poor interpretation of the bird index. We therefore suggest that the ONS is provided with greater support in the interpretation of its figures for their reports. Without such support there is a danger that there will be similar misunderstandings across this broad set of measures.

14 June 2013

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[3] http://www.ons.gov.uk/ons/rel/wellbeing/measuring-national-well-being/natural-environment/art-the-natural-environment.html

Written evidence submitted by Professor Lord Richard Layard, Centre for Economic Performance (Wellbeing Programme), LSE

How can we base public policy on subjective wellbeing?

There is a widespread desire to measure subjective wellbeing: "if you treasure it, measure it". But how shall we use the information? And what other information would we need to make subjective wellbeing (SWB) an effective policy goal?

To answer these questions we need:

(i) a new type of cost-benefit analysis, and

(ii) a clear concept of how wellbeing is determined.

Let me discuss both issues, illustrating the kinds of new policy priorities which might emerge.

1. The New Cost-Benefit Framework For Policy

Public policy is of course made in many ways, some more formal than others. But it always helps to start with the ideal case, even if it cannot be used all the time. In current practice the ideal method of policy-making is by cost-benefit analysis where the units of measurement are dollars. For each person affected by a policy change we attempt to evaluate his change in wellbeing in terms of how much he would be willing to pay to bring about the change. In other words, changes are evaluated in terms of their impact on the present value of GDP, properly measured. This works quite well where we can infer willingness-to-pay from choice behaviour. So it is of obvious value in relation to education, transport policy, industrial policy and some aspects of the environment.

But the majority of public expenditure goes on quite different areas: health, social care, law and order, employment and of course the redistribution of income. (I omit defence which is especially difficult to analyse under any framework). In these other areas politicians have always implicitly used judgements about the wellbeing effects of these policies.

In health, Britain and some other countries already try to evaluate policy in terms of its impact on Quality Adjusted Life Years (QALYs). This measure is not very satisfactory since the quality-of-life impact of a disease is obtained by asking the general population how many years of life they would be willing to give up to avoid the disease. Such hypothetical questions have been shown to give very poor estimates in many contexts.[4]

Now however the new science of wellbeing enables us in principle to obtain direct measures of the impact of a policy change—measured in units of subjective wellbeing.

So thinking about policy change should proceed in 4 steps:

(1) First we look at the distribution of wellbeing in a country or a city, observe where wellbeing is low or where it is obviously lower than it should be;

(2) We try to understand the process which has brought about these outcomes (see next section);

(3) We invent possible policies which might deal with the worst outcomes;

(4) We evaluate these policies as a guide to which to adopt.

The evaluation has two elements: benefit and cost. In principle each of these can accrue to individuals, businesses or taxpayers. In practice, it is useful to assemble on the one side the net benefits to the private sector and on the other side the net costs to the government. In the new model the net benefits would always be measured in units of SWB.[5]

The net costs to the government would need careful modelling to include all the indirect cost savings (or the opposite) which the gross cost might generate. These taxpayer costs would initially be measured in dollars.

Thus benefits and costs would be in different units. But this does not matter if public expenditure is pre-determined. In this case the issue is for all possible projects i to

(1)

$$\max_{C_i} \sum_i B_i\ (C_i) s.t. \sum_i C_i\ = C_0$$

[4] Kahneman, D, Ritov, I and Schkade, D (2000). "Economic preferences or attitude expressions? An analysis of dollar responses to public issues" in *Choices, values and frames* D Kahneman and A Tversky (Eds). New York, Cambridge University Press and the Russell Sage Foundation.

[5] The main action will involve individuals, where changes in SWB are more easily measured than for the owners of businesses.

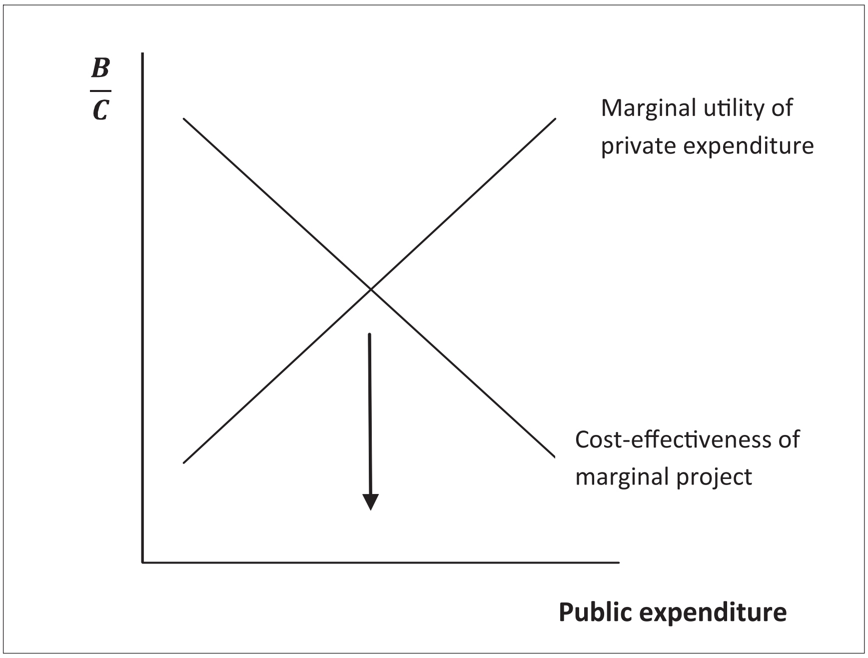
Assuming no problems with indivisibilities, this leads to the following rule:

Select all projects *i* for which

$$\frac{B_i}{C_i} > \lambda \qquad (2)$$

This is cost-effectiveness analysis. But it does not of course help us to reflect on the level of total public expenditure. For this we have to estimate the effect on SWB of the taxes used to finance the public expenditure cost. This can in principle be estimated from an SWB

Figure 1



equation in which disposable income appears as an independent variable, thus yielding an estimate of the marginal utility of income. This coefficient will vary with income, so let us call it λ (Y). Then, ignoring income distribution, we should select projects in order of their *Bi/Ci* until for the marginal project *j*.

$$\frac{B_j}{C_j} = \lambda\,(Y_0 - \sum C_i) \qquad (3)$$

This position is illustrated in Figure 1. However it is unlikely that governments will be willing to let public expenditure be determined in this way.

Moreover, even if we stick with cost-effectiveness analysis, there are still three substantial problems:

(i) the distribution of wellbeing

(ii) the discount rate, and

(iii) life expectancy.

Distribution of Wellbeing

For Jeremy Bentham there was no problem about the distribution of wellbeing: we should simply maximise its average level. But modern ethical analysis rejects this point of view. For example, if we imagine individuals judging different states of the world, not knowing which participant they will be, they would almost certainly show some degree of risk-aversion in relation to wellbeing itself.[6] However citizens (and politicians) differ in their degree of concern for inequalities in wellbeing. The best that analysts can do is to illustrate the implications of different degrees of inequality aversion.

Discount Rates

When it comes to discount rates, things are more clear-cut. There can be no ethical reason for supposing that the SWB of a future generation is less important than our own. Of course, if their SWB is higher than ours, then we may attach a lower marginal value to extra units of SWB for them, as compared with us. And, climate sceptics please note, vice versa. But this is nothing to do with the present versus the future.

The preceding remarks relate to the aggregation of benefits. On the public expenditure side, if this is constrained separately in each period, there will of course be in principle a separate shadow price for expenditure in each period.

Length of Life and Number of Lives

As regards the number of people, I would argue that there is no intrinsic merit in having more or fewer lives. It is the quality of the lives which actually occur which matters. So too does their length. The standard practice is to multiply the average quality of a person's life by the number of years it is lived. There is no obviously better alternative.

So we come now to the issue of evidence: how can we know what benefits a policy will bring?

2. The Evidence Base

As I have said, there are three main stages in policy formulation:

(i) Noticing and understanding the problem.

(ii) Design of possible solutions.

(iii) Evaluation of each solution.

The measurement of population wellbeing is certainly the first step in (1). These types of cross-sectional data have already shown us the importance for SWB of employment status, job characteristics, income, family status, health, local environment, age and gender. These analyses are extremely interesting and have highlighted the policy importance of full employment, of well-designed jobs, of family life, of adequate income, and of health, especially mental health.

But they leave many questions unanswered. This is obvious when we ask ourselves: What would we do to make things better for these people? How many of these problems would be best affected by directly helping the person now, and how many would in fact be handled best by earlier intervention in people's lives? In many cases it would be more effective (and less demeaning) to intervene earlier—which is of course why so much public expenditure is focussed on childhood.

Wellbeing over the Life-course

So for policy purposes we need a model of SWB over the life-course, which includes a person's present circumstances but also an explanation of how they got to that position. Let me give an example based on the British Cohort Study of people born in 1970.

The individual is born into a family with a certain socio-economic level (income, education, SEG) and certain psychological characteristics (maternal health, family stability). She then develops an emotional health of her own, a pattern of pro/anti-social behaviour and a level of intellectual development. These are measured at ages five, 10 and 16, at each of which points we could envisage policy intervention. Then by the age of 34 the person is an adult with a given level of emotional health, criminal record, educational qualifications, employment, earnings, family structure and physical health. What happens at each stage is in principle affected by everything which goes before—it is a recursive, path model.

The outcome of interest is life-satisfaction at 34. There are three ways of explaining this:

> Method 1 is similar to what will emerge from the OECD's recommended surveys. We explain life-satisfaction by the other current features of life at age 34.
>
> Method 2 is the crude life-course approach when life-satisfaction is explained directly by the person's childhood and family background.
>
> Method 3 is the most illuminating where life-satisfaction is explained by the other features of life at 34 (as in Method 1) but then each of these is explained by childhood and family background. This is much the most informative. It gives almost exactly the same role to childhood as Method 2 but explains more clearly how childhood affects our life-satisfaction as adults (see Annex).

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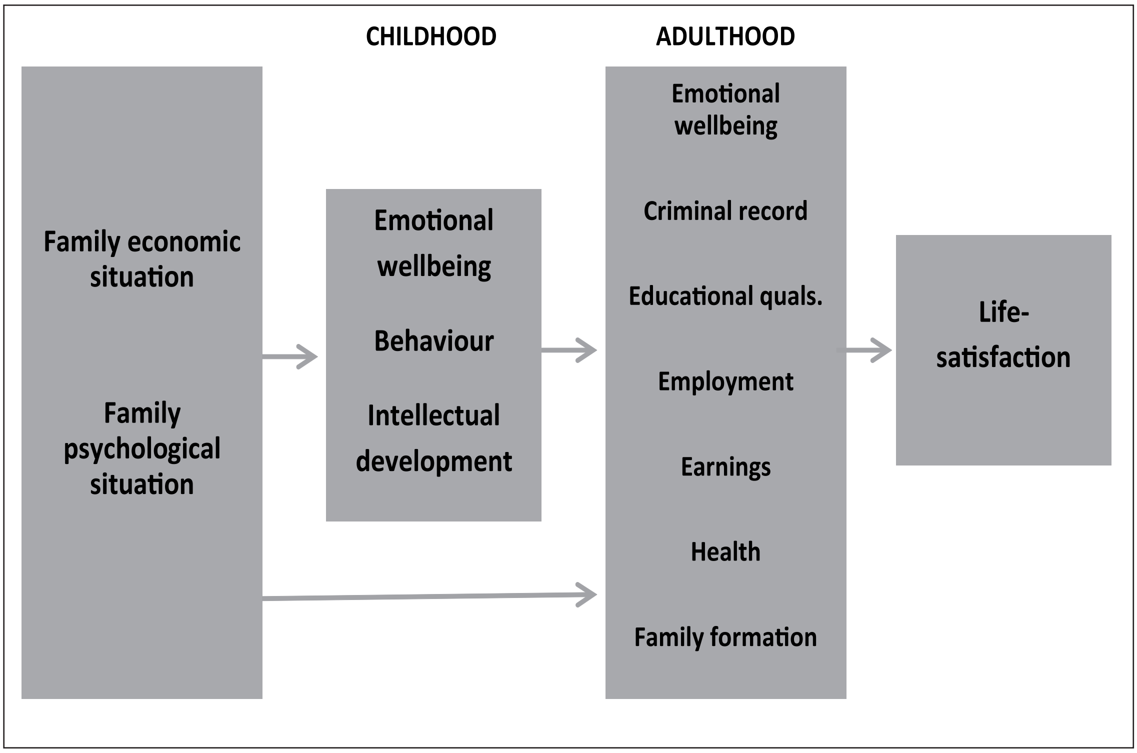
6 Layard, R (2011). *Happiness: Lessons from a new Science (2nd ed.)*. London, Penguin, pages 245–7. In existing cost-benefit analysis (using dollars as the metric) the problem of income distribution is often said to arise from interpersonal differences in the marginal utility of income. But it goes deeper than this.

Figure 2

A MODEL OF THE LIFE-COURSE



Policy Analysis and Experimentation

So how does this help in policy analysis? It certainly suggests areas where we may want to intervene. But the only really convincing way to evaluate a policy change is through experimentation with a proper control group. The problem with experiments is that if the experiment is at age 10 and we want to know its effects at age 34 we have to wait 24 years. Models can help us overcome this problem. If we know the effect size of an intervention at age 10, we can use the model to simulate its effects at age 34.

Of course this will only work if the model is truly causal. The main problem with most cohort models (and most social science) is that they omit the genes. If emotional wellbeing at 10 appears to affect emotional wellbeing at 34 with a partial correlation of .10, this is partly because both variables are correlated with a common genetic influence. So if we altered wellbeing at 10 it might well affect wellbeing at 34 by less than appears from most models of the life-course.

Ultimately we must use cohort models with either DNA or twin data. But in the meantime we can use those we have, provided we do it with proper caution. And we shall certainly find that the cross-sectional data which the present OECD exercise throws up will be far more useful if they are combined with data from cohort studies.

Annex[7]

A MODEL OF MALE WELLBEING OVER THE LIFE-COURSE

(PARTIAL CORRELATION COEFFICIENTS)

Model 1. Explanation by Adult Variables

Life-satisfaction at 34:

= .17 Emotional health at 26
+ .06 Criminal record 16–34
+ .02 Educational level
+ .22 In full-time work at 34
+ .12 Earnings (if in full-time work) at 34
+ .10 Married or cohabiting at 34

[7] Work done with Andrew Clark, Francesca Cornaglia, Nattavudh Powdthavee, James Vernoit and Nele Warrinnier.

+ .06 Self-perceived health at 26

Model 2. Explanation by Childhood and Background

Life-satisfaction at 34:

= .09 Family background (economics)
+ .03 Family background (psychological)
+ .25 Emotional health at 5, 10 and 16
+ .07 Good conduct at 5, 10 and 16
+ .06 Cognitive performance at 5 and 10

Model 3. Combined Model

— First we estimate an equation to explain life-satisfaction at 34 which includes all variables for Model 1 and Model 2. The effects of the current variables are almost as in Model 1 but the effects of the childhood variables are negligible.

Thus childhood effects are therefore working mainly via the current variables. The following table shows these effects.

— Next we confirm that combining this table with the coefficients in Model 1 provides a predictive equation similar to that in Model 2.

— However the combined model is to be preferred because it explains how Model 2 occurs, giving better clues on all the effects (especially on costs) associated with any intervention.

STRUCTURAL EQUATIONS FOR ADULT SUCCESS

(PARTIAL CORRELATION COEFFICIENTS)

VARIABLES	*(1) Emotional health*	*(2) Good conduct*	*(3) Education*	*(4) Earnings (FT men only)*	*(5) FT work (men only)*	*(6) Having a family*	*(7) Health (self-perceived)*	*(8) Life-satisfaction*
Family Economic	0.079***	0.033***	0.318***	0.253***	0.027***	0.024***	0.094***	0.086***
	(0.011)	(0.005)	(0.015)	(0.022)	(0.006)	(0.007)	(0.018)	(0.019)
Family Psycho-	0.093***	0.056***	0.052***	-0.025	0.015	0.033**	0.071***	0.049***
	(0.020)	(0.016)	(0.015)	(0.018)	(0.016)	(0.015)	(0.024)	(0.020)
Emotional health (5 10 16)	0.380***	-0.066***	0.014***	0.098***	0.047***	-0.027	0.193***	0.208***
	(0.023)	(0.013)	(0.003)	(0.028)	(0.016)	(0.017)	(0.023)	(0.024)
Good conduct (5 10 16)	0.107***	0.232***	0.147***	0.040***	0.059***	0.120***	0.069***	0.105***
	(0.020)	(0.023)	(0.014)	(0.010)	(0.016)	(0.024)	(0.018)	(0.020)
Cognitive Perf (5 10)	0.084***	0.060***	0.329***	0.176***	0.055***	0.084***	0.059***	0.047***
	(0.015)	(0.012)	(0.013)	(0.017)	(0.013)	(0.017)	(0.015)	(0.012)
Female	-0.302***	0.424***	-0.001			-0.041*	-0.084***	0.091***
	(0.021)	(0.018)	(0.018)			(0.024)	(0.022)	(0.022)
Observations	8,254	10,918	10,575	3,007	4,242	6,896	8,260	8,868
Adjusted R-squared	0.271	0.319	0.270	0.097	0.008	0.020	0.064	0.087

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.10$

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