

Hedonics, or the study of happiness: a load of old rubbish or a new hard science?

Peter J Stoward

Over the past decade or so, an increasing number of economists and social scientists have joined forces to measure the happiness or well-being of individuals and countries, and to isolate the factors that contribute significantly to, or militate against, such well-being. One purpose is to determine whether governments, through their actions and policies including investment in research, actually improve the economic and personal welfare of their citizens. For this reason, applicants for research grants are now required to show that their research will have economic benefits and enhance human well-being. Further, there have been suggestions that this approach could form the basis of developing the 'good society' with a greater emphasis on satisfaction with life and less emphasis on material progress, wealth creation and gross domestic product (GDP) than hitherto¹. However, there are widespread disagreements about defining happiness and well-being², and the validity of methodology for measuring them.

The happiness or subjective well-being (SWB) of individuals and a country's population has been measured using:

1. Questionnaires or surveys of self-reported happiness on scales of e.g. 1-4 or 1-10^{3,4}.
2. Observed social behaviour^{3,4}.
3. Non-verbal behaviour^{3,4}.
4. Neurobiological, biochemical and anatomical measurements, such as prefrontal cortical asymmetry using functional magnetic resonance imaging (to give the Davidson Index)³.

Assays of blood markers and simple body measurements that correlate significantly with SWB offer the promise of objective studies of the well-being of individuals⁵. For example, increased plasma dehydroepiandrosterone levels and smaller waist circumferences have been found to correlate strongly with well-being in men but not in women. In contrast, lower plasma concentrations of inflammatory markers and increases in levels of high density cholesterol correlate significantly in women but not in men. Plasma triglyceride levels correlate inversely in both men and women,

A possibly better measure of the human condition than SWB is the U-index (U='unpleasant' or 'undesirable'), defined as the proportion of time that an individual feels unhappy or dissatisfied³, but few measurements of this parameter have been published so far. The easily computed misery index (MI), the retail price index inflation rate plus unemployment rate, may reflect how a population feels at a particular time⁶.

The SWB of most individuals has been found to be remarkably stable and reproducible, despite doubts about its scientific validity and the methodology (using questionnaires) to measure it. It can change by up to about 25% by traumatic experiences, such as the death of a spouse or a serious illness, or by episodes of good fortune such as winning the lottery, but then recovers to original levels after 1-2 years^{3,4}. Studies of identical twins suggest SWB correlates with about 50% genetic make-up, 10-15% measurable variables such as marital status, health and income, and 35-40% from actions taken by an individual to become happier⁷.

SWB has been observed to correlate positively with, for example, frequency of smiling 'with eyes', sociability and extraversion, sleep quality, good health, income up to a certain level, and *recent* changes of circumstances (e.g. marriage, income rise)^{3,8}. However, the average SWB in a country does not change significantly from year to year⁹ or with rises in GDP per capita (the Easterlin effect). Thus, it is of little value for monitoring the effectiveness of social and welfare policies. As real incomes and GDP rise, happiness does not appear to change⁸.

The following composite measures, among many others, of a nation's well-being that combine 4-12 assumed independent variables have been formulated in attempts to solve this problem: the Human Development Index (HDI)¹⁰ developed by the United Nations Development Programme¹¹, the Quality

of Human Condition (QHC)¹², the *Economist* Intelligence Unit's Quality of Life Index (QLI)¹³, OECD's Better Life Index (BLI) of 11 indicators¹⁴, the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS)¹⁵, and two 'green' economic and welfare measures proposed by Friends of the Earth, the Genuine Progress Indicator (GPI) and Index of Sustainable Economic Development (ISEW)¹⁶. The well-being of the Earth and its wildlife and resources are monitored by the World Wildlife Fund (WWF) as a Happy Planet Index (HPI) and Total Ecological Footprint (TEF)¹⁷.

Contrary to previous reports, I have found that with the exception of HPI and BLI, these indices show strong correlations with each other including SWB, despite being calculated from different data sets. The weightings of the factors that contribute positively and negatively to the overall QLI of a country, compared to that of the region it is in, vary considerably. Thus, for example, the UK's lower QLI in 2005 compared to the average of the European Union, is mostly due to poorer family life and political instability, although the UK scores higher on gender equality. Unfortunately, there are very few reliable data sets of year-on-year trends of these factors in any country. A possible exception is OECD's BLI. In addition, two major factors believed to contribute to a 'good society', Social Justice and Altruism or Kindness, have been largely been ignored by SWB investigators.

The UK Government Development Strategy (based in DEFRA) is developing 68 National Indicators of Sustainable Development (NISDs), including personal well-being¹⁸. Like HDI and BLI data, NISDs show the importance of 'disaggregation', the breaking down of indicator data by age and socio-economic cohorts, to reveal genuine trends. On the negative side, although local authorities have been required to use their statutory 'Well-Being Power' since 2000 to enhance the lives of people in their communities, mainly they have not done so¹⁹. In contrast, the OECD¹² and the Institute of Development Studies at the University of Sussex²⁰, among others, have been monitoring key indicators world-wide for several years.

In conclusion, whilst much of the considerable data on happiness published so far is of limited value, scientists and policy makers now have more refined objective measuring tools of well-being for monitoring the effectiveness or otherwise of introducing new technologies and policies for improving the well-being of individuals and nations that, at the same time, ensure a sustainable, just and safer world. So far, comparatively little work has been done in this area but it urgently needs to be done.

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Glossary of acronyms

BLI	Better Life Index (<i>OECD</i>)
fMRI	Functional magnetic resonance imaging
GDP	Gross domestic product
GPI	Genuine Progress Indicator (<i>Friends of the Earth</i>)
HDI	Human development index (<i>United Nations Development Programme</i>)
HPI	Happy Planet Index (<i>World Wildlife Fund</i>)
ISEW	Index of Sustainable Economic Development (<i>Friends of the Earth</i>)
MPI	Multidimensional Poverty Index (<i>Oxford Martin Institute for Ageing</i>)
MI	Misery index
NISD	National Indicator(s) of Sustainable Development (<i>DEFRA</i>)
QHC	Quality of Human Condition
QLI	Quality of Life Index (<i>Economist</i>)
SWB	Subjective well-being
SWEMBWS	Short Warwick-Edinburgh Mental Well-being Scale
TEF	Total Ecological Footprint (<i>World Wildlife Fund</i>)