

# Measuring happiness across the ages



The ESRC-funded CAGE centre has a broad remit that includes the study of national subjective wellbeing, commonly called 'happiness economics', as one of its key themes. A team of researchers at CAGE, including myself, Thomas Hills (a psychologist) and Eugenio Proto (an economist) have developed a measure of national happiness stretching back hundreds of years.

## Measuring long-term happiness

Happiness has long since moved from being considered a fringe concern for economists to being a major policy objective. 2011 saw the launch of the UN World Happiness Report and the OECD's Better Life Index, and at the level of national governments, the UK is leading the way in thinking about how national happiness as a policy objective. But, if we are going to take national happiness seriously and place it alongside national income, inflation and unemployment as a key policy target, we need the sort of long-term data we are used to having in these other areas. This presents something of a challenge: we typically build happiness indices by surveying current opinion. In order to go back further than the experience of anyone alive we needed to look beyond the normal methods used within economics, bringing in elements of psychology and Big Data.

Psychologists have long known that we can infer mood not just by asking, but also by looking at what people do, how they act and even what they read or write. This insight has resulted in the production of word norms that associate thousands of words with their implied mood, and has allowed social scientists to derive mood from passages of text, blog posts, Twitter feeds and Facebook posts.

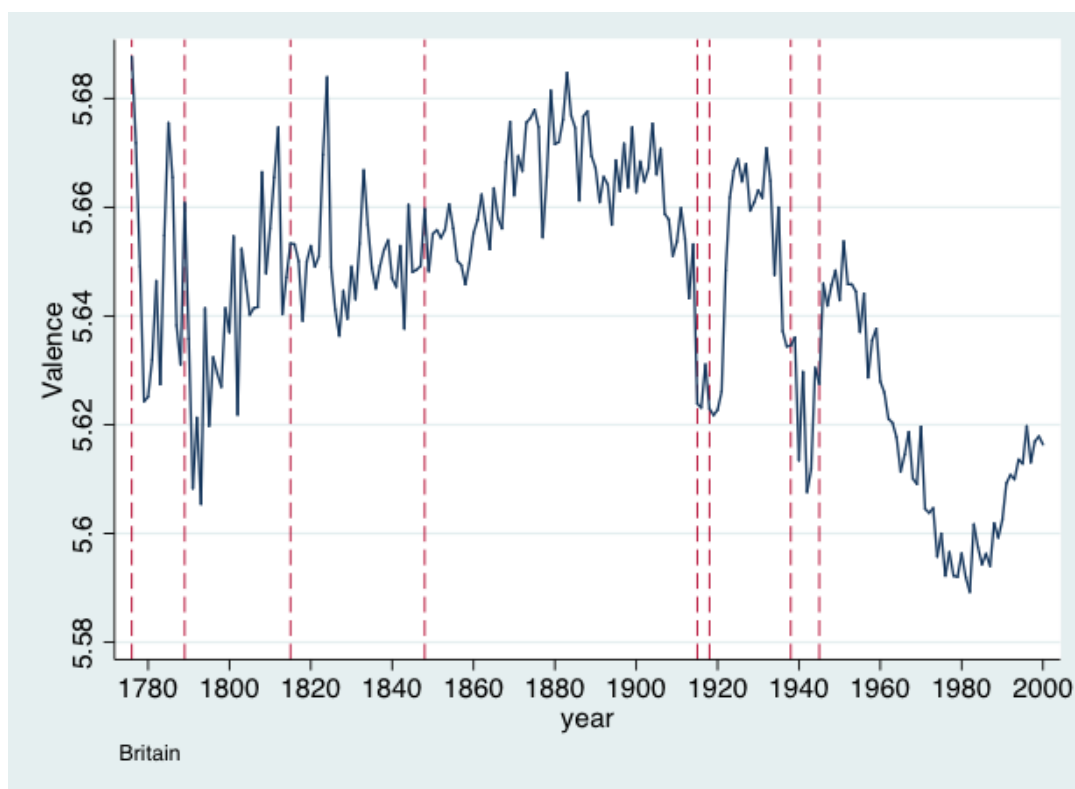
We applied this method to the hundreds of years' worth of digitised books provided by Google, amounting to millions of texts and billions of words. The market for books is at least partly formed through publishers trying to match consumer demand and mood, which provides us with the final link we need to build a measure of national mood going back in time. The result is an index for several countries that can potentially go back as far as books have been digitised.

## The pursuit of happiness

We elected to start our index in 1776, a year in which 'the pursuit of happiness' was very much at the top of the political agenda – embedded as a human right in the US Declaration of Independence. Moving into the nineteenth century, language becomes much more standardised and literacy rates continue to rise (exceeding 75 per cent in the UK and USA by 1870 according to some measures), giving us increasing confidence in a text-based measure.

Rolling the text-derived measures of subjective wellbeing back to 1776 reveals a quantitative picture of how public sentiment has changed across the six countries. Glancing at the figure below we can see the exuberance of the 1920s, the depression era, and World War I and II show clear and distinguishable influences on subjective wellbeing in the UK (and we can see similar patterns across the other countries we have investigated). We can also see the boost to happiness after World War II (a period of high aspirations) and the fall back (perhaps as those aspirations fail to be achieved) to the trough during the “Winter of Discontent”. While we warn against super long-run comparisons (aspirations have changed so much over the last few centuries it might not be sensible to compare the levels of happiness in 1800 with 2000) we can see much in our index that makes sense.

Figure 1.



*Notes: The Average Valences Over the Period 1776-2000 Vertical red lines correspond to 1789, the year of the French Revolution, the Napoleonic Wars (1803-15), the year of the revolutions (1848), World War I (1915-18) and World War II (1939-45).*

### So what can we learn from our index?

Our index correlates very well with one of the oldest measures of physical wellbeing – life expectancy. The index picks up many of the things we would expect to see, such as massive drops in happiness during the two world wars. From the 1970s onward national-level surveys become available; these have been found to correlate well with our index, providing more confirmation that our methods are valid.

Overall, wars have the biggest negative impact on national happiness, especially domestic conflicts and world wars. What also matters a lot is health, and in particular anything that works to boost life expectancy. That means major killers such as heart disease, cancer and road deaths, and major ongoing issues such as obesity and mental health. National income is surprisingly not well-correlated with our index, perhaps an indication that the countries we analysed we are past the point where income is a strong determinant of happiness at the national level – even though the poorest in society are not yet in that fortunate position. However, if we want to improve health at the national level, we have to fund it somehow and so national income remains very important.

The bottom-line is that if boosting national happiness is really to be a primary objective of government then policy-makers need to think about the long-run health of the nation and, of course, avoiding wars.



*Notes:*

- *This blog post appeared originally at Advantage Magazine, published by [CAGE](#), the Centre for Competitive Advantage in the Global Economy, an ESRC-funded research centre based in the Department of Economics at the University of Warwick.*
- *The post summarises the author's paper [Historical Analysis of National Subjective Wellbeing using Millions of Digitized Books](#), co-authored with Thomas Hills and Eugenio Proto. You can also read the author's recent CAGE policy report [Understanding Happiness](#), co-authored with Thomas Hills, Gus O'Donnell, Andrew Oswald and Eugenio Proto, which includes a longer summary of the work discussed in this blog post.*
- *The post gives the views of its authors, not the position of LSE Business Review or the London School of Economics.*
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