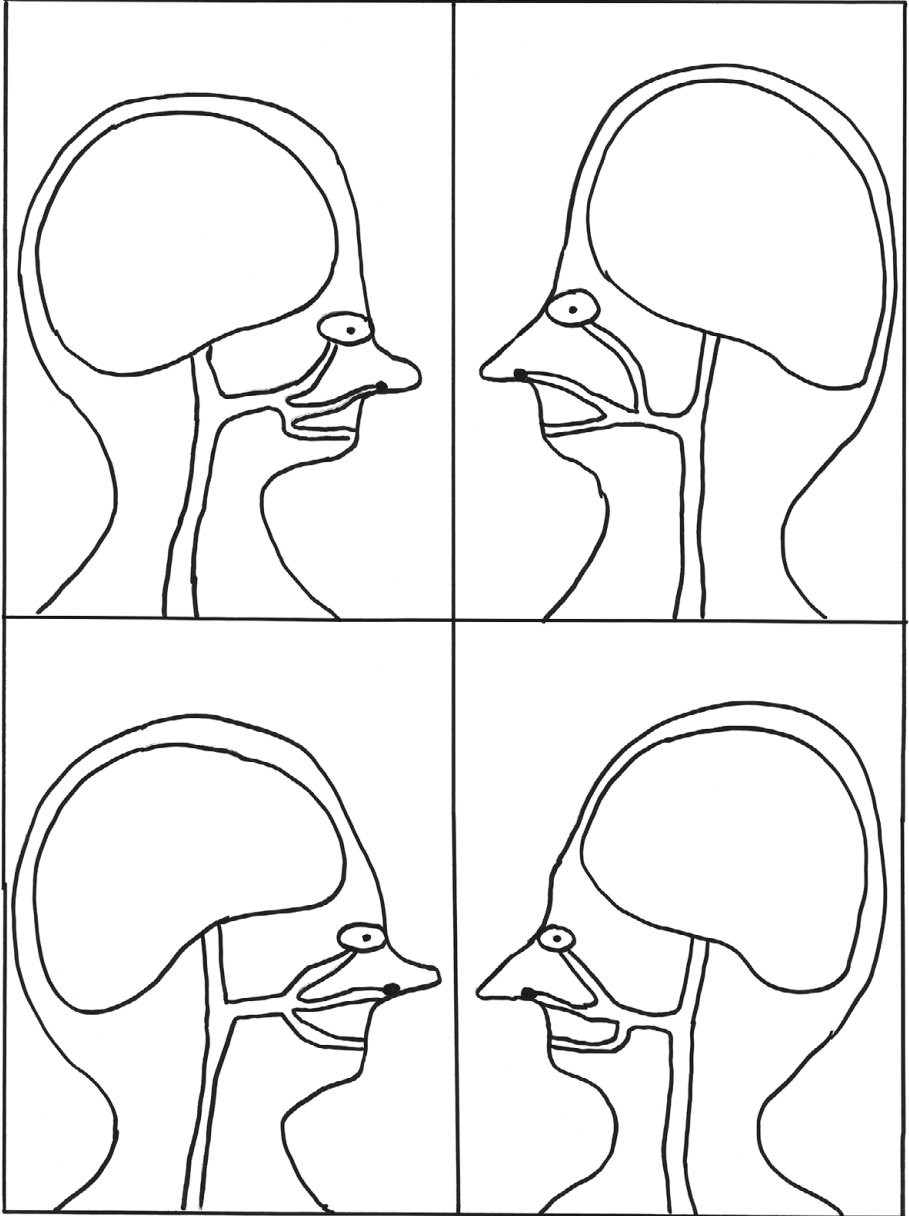


IMPOSSIBLE TO KNOW WHAT'S GOING ON
INSIDE THEIR HEADS



1 What Subjective Wellbeing Is and Why It Matters

The gross national product measures everything except that which makes life worthwhile.

Robert Kennedy

Subjective Wellbeing as the Overarching Good

The idea of wellbeing as the ultimate good is not new. But now it is coming to the fore, for many reasons. One is the new science of wellbeing. But another is the growing disbelief that higher incomes alone will solve all our problems.

The movement in favour of going '**beyond GDP**' has taken many forms. For the last fifty years, there has been a strong movement of scholars producing 'social indicators' in addition to GDP. In parallel with this, the Nobel-prize-winning economist Amartya Sen has set out the many 'capabilities' that a person needs to function well.¹ Following this, the OECD has developed a range of 'wellbeing indicators' for member countries, which include not only standard measures of education, health and so on but also psychological measures.² This work has inspired the New Zealand government to adopt wellbeing as its goal and to join a multi-country alliance known as Wellbeing Economy Governments.³

At the same time, the world has been shocked by the climate emergency, which has underlined the short-sightedness of maximising current GDP, without regard to the more distant future. To deal with this problem, the UN's 17 Sustainable Development Goals for 2030 look firmly to the future but they also enshrine a much broader view than the purely economic of what it is to be human.

There is, however, one central problem that still faces every policymaker. If you have multiple goals, how do you choose between alternative policies? Policy A may be better than Policy B in terms of one objective and worse in terms of another. How are you to choose?

Coherent choice is only possible if you have a single objective, in terms of which all alternative policies can be ranked. We need a '**common currency**' for decision-making. One way to have one is to construct an index that is a weighted average of all

¹ Nussbaum and Sen (1993); Sen (1999). ² OECD (2013).

³ As of writing, Finland, Iceland, New Zealand, Scotland and Wales.

the different objectives. But you still have to choose the weights. They can only be found by having a single objective that can determine the weights.

What might that single objective be? The most obvious answer is **‘how people feel about their lives’**. This is what we mean when we talk about **‘subjective wellbeing’** (sometimes called SWB).

However, say some critics, feelings can’t be that important because they are ‘only subjective’. Are they right? There are of course many other things that are good, including health, income, freedom, respect and peace. For each of these things, you can ask people what makes it good, and people can generally give answers. For example, health matters because people feel awful when they are sick. Similarly, most other goods are good because of how they affect our felt experience. But why does it matter how people feel? No reason can be given – it **self-evidently** does. So when people advocate wellbeing, they are thinking of it as the ultimate good, with other things being good if they are instrumental in contributing to wellbeing. This basic idea was illustrated in Figure I.1 in the Introduction.

So the wellbeing approach builds upon the approaches where people specify multiple objectives – the ‘dashboard’ approach.⁴ But it goes a lot further. It offers a vision of a society where the ultimate touchstone is the quality of people’s lives as they themselves experience them. It says that the wellbeing of the people should be the goal for a society, for its policymakers and for us as individuals. If you find this idea problematic, you might try to think of a better alternative goal.

One further point. In the wellbeing approach, what matters is the overall wellbeing of everyone. So this approach is not saying that people should pursue only their own wellbeing. On the contrary, it is saying that each individual and each organisation should do what it can to produce the greatest overall wellbeing in society.

How Should We Measure It?

But how should wellbeing be measured? There are three main conceptions of wellbeing that have been measured:⁵

- Evaluative (life satisfaction),
- Hedonic, and
- Eudaimonic.

Evaluative measures: The life satisfaction approach

In the first of these, people are asked how they feel about their life these days. The most common question is ‘Overall, how satisfied are you with your life

⁴ The leading advocate of this approach is Sen (1999). But many other distinguished writers also follow the dashboard approach, including Pinker (2018) (health, happiness, freedom, knowledge, love and richness of experience); Seligman (2018) (positive emotion, engagement, relationships, meaning and accomplishment); and Skidelsky and Skidelsky (2012).

⁵ On this section, see Helliwell (2021).

nowadays?’⁶ To answer it, individuals have to choose a score between 0 and 10, where 0 means ‘Not as all satisfied’ and 10 means ‘Very satisfied’. This is a question on **life satisfaction**. Alternatively (which gives very similar answers), people are offered a continuous line with the same answers at either end, and they are asked to mark where their answer lies in between. The results of using a ‘visual analogue scale’ like this are very similar to those from whole-number answers between 0 and 10 – both in terms of the score recorded and the factors that explain it.⁷ The results are also similar when, the phrase ‘satisfied with your life’ is replaced by the phrase ‘happy with your life’.⁸

In another variant, people are asked the following question, known as the **Cantril ladder** question:

Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?

The World Happiness Report uses the answers to the Cantril ladder question given when people reply in the Gallup World Poll.⁹ This poll covers over a thousand people a year per country, in nearly every country. In surveys where people were asked both about life satisfaction and the Cantril ladder they were very highly correlated.¹⁰ So for ease of language we shall describe the results of the Cantril ladder as ‘life satisfaction’.

The Gallup World Poll shows the huge spread of life satisfaction both within countries and between countries. For illustration, Figure 1.1 gives the spread in the United States and in India. Some key facts emerge:

- In each country there is a very wide spread of life satisfaction. This corresponds to our own experience, across the range of people we meet.
- The average of life satisfaction is much higher in the United States than in India.

There is indeed a huge variation of life satisfaction **within any country**, and this within-country variation actually accounts for 78% of the overall variance in life satisfaction across the world’s population.¹¹ Exploring the within-country variation provides key information about the **personal factors** that matter most in human life (see Chapter 8). For example, as we shall see, income differences explain some 2% of the variance of life satisfaction within countries – much less than the 20% explained by mental health, physical health and human relationships. (Somewhat surprisingly, average life satisfaction in most countries is very similar for men and women.)

There are, however, also huge differences in average life satisfaction **across countries**. This is shown in Table 1.1,¹² which reveals the extraordinary variation in

⁶ This is the version used by the United Kingdom’s Office for National Statistics (ONS).

⁷ Couper et al. (2006). But see also Cowley and Youngblood (2009). Neither of these surveys was measuring life satisfaction.

⁸ Helliwell and Wang (2012) p. 14.

⁹ We are using Gallup data a lot in this book because it covers almost every country. But in many cases, similar findings were obtained earlier from sources like Eurobarometer and the World Values Survey.

¹⁰ Helliwell and Wang (2012). ¹¹ Helliwell and Wang (2012) p. 16.

¹² A comparable ranking of life satisfaction among 15-year-olds can be found in Table 6.1.

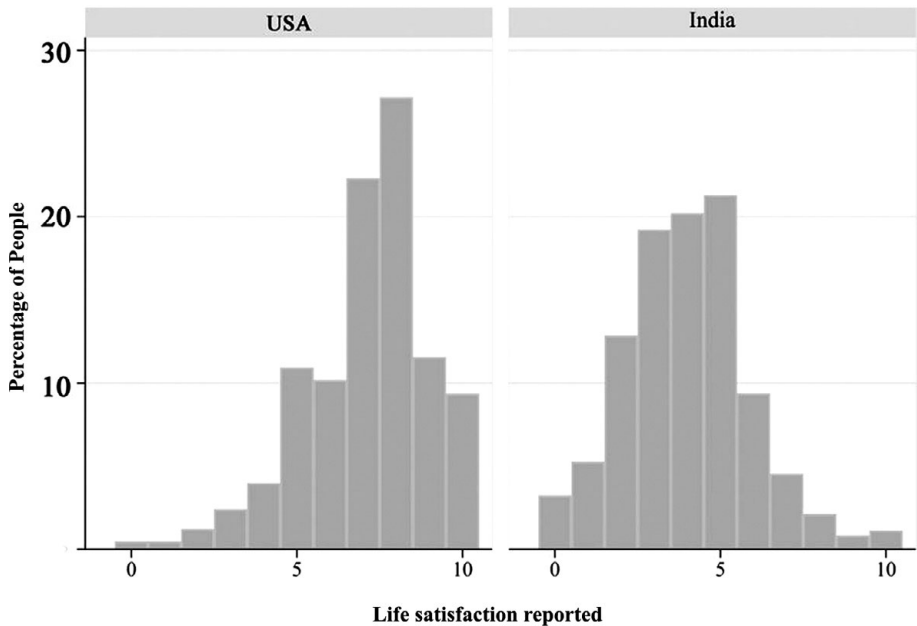


Figure 1.1 Percentage at each level of life satisfaction (0–10): United States and India
Source: Gallup World Poll 2016–2018, Cantril ladder

the human condition around the world. Average wellbeing is evaluated at 7.5 or above in four Scandinavian countries and at 3.5 or below in war-torn countries like Syria, Yemen, Afghanistan, the Central African Republic and South Sudan. Explaining this variation provides many clues to the **social factors** that matter most in human life (see also Chapter 8).

One obvious question is, ‘Has wellbeing increased over time, as living standards have risen?’ The answer is in some cases yes and in others no. For the world as a whole, average wellbeing rose between the 1970s and 2007.¹³ Since then, however, it has stagnated.¹⁴ And in some countries wellbeing has not risen since research began. This is true of the United States (since the 1950s), West Germany (since the 1970s) and China (since 1990).¹⁵ Figure 1.2 shows the figures for the United States.

If only we knew more about trends in wellbeing in earlier periods.¹⁶ There is certainly strong evidence that most of the external conditions of life are now better than in most of human history. As Stephen Pinker has shown,¹⁷ there is less violence, better human rights and so on. So in most parts of the world, life is probably as good now as it has ever been.

¹³ A. E. Clark et al. (2012); Figure 3.4. ¹⁴ Helliwell et al. (2020); Figure 2.2.

¹⁵ See Layard et al. (2010); and Easterlin et al. (2017) supplemented by Helliwell et al. (2020).

¹⁶ For an attempt at this see Hills et al. (2019).

¹⁷ Pinker (2018). However, in studies of the Masai and Inuit (both Old Stone Age cultures), surveys registered quite high levels of positive affect. Biswas-Diener et al. (2005).

Table 1.1 Ranking of countries by their average life satisfaction (0–10)

1	Finland	7.8		Philippines	6.0		Niger	4.9
	Denmark	7.6		Hungary	6.0		Laos	4.9
	Switzerland	7.6		Thailand	6.0		Albania	4.9
	Iceland	7.5		Argentina	6.0		Cambodia	4.8
	Norway	7.5		Honduras	6.0		Bangladesh	4.8
	Netherlands	7.4		Latvia	5.9		Gabon	4.8
	Sweden	7.4		Ecuador	5.9		South Africa	4.8
	New Zealand	7.3		Portugal	5.9	110	Iraq	4.8
	Austria	7.3	60	Jamaica	5.9		Lebanon	4.8
10	Luxembourg	7.2		South Korea	5.9		Burkina Faso	4.8
	Canada	7.2		Japan	5.9		Gambia	4.8
	Australia	7.2		Peru	5.8		Mali	4.7
	United Kingdom	7.2		Serbia	5.8		Nigeria	4.7
	Israel	7.1		Bolivia	5.7		Armenia	4.7
	Costa Rica	7.1		Pakistan	5.7		Georgia	4.7
	Ireland	7.1		Paraguay	5.7		Iran	4.7
	Germany	7.1		Dominican Republic	5.7		Jordan	4.6
	United States	6.9		Bosnia and Herzegovina	5.7	120	Mozambique	4.6
	Czech Republic	6.9	70	Moldova	5.6		Kenya	4.6
20	Belgium	6.9		Tajikistan	5.6		Namibia	4.6
	United Arab Emirates	6.8		Montenegro	5.5		Ukraine	4.6
	Malta	6.8		Russia	5.5		Liberia	4.6
	France	6.7		Kyrgyzstan	5.5		Palestinian Territories	4.6
	Mexico	6.5		Belarus	5.5		Uganda	4.4
	Taiwan Province of China	6.5		North Cyprus	5.5		Chad	4.4
	Uruguay	6.4		Greece	5.5		Tunisia	4.4
	Saudi Arabia	6.4		Hong Kong S.A.R. of China	5.5		Mauritania	4.4
	Spain	6.4		Croatia	5.5	130	Sri Lanka	4.3
	Guatemala	6.4	80	Libya	5.5		Congo (Kinshasa)	4.3

Table 1.1 (cont.)

30	Italy	6.4		Mongolia	5.5		Swaziland	4.3
	Singapore	6.4		Malaysia	5.4		Myanmar	4.3
	Brazil	6.4		Vietnam	5.4		Comoros	4.3
	Slovenia	6.4		Indonesia	5.3		Togo	4.2
	El Salvador	6.3		Ivory Coast	5.2		Ethiopia	4.2
	Kosovo	6.3		Benin	5.2		Madagascar	4.2
	Panama	6.3		Maldives	5.2		Egypt	4.2
	Slovakia	6.3		Congo (Brazzaville)	5.2		Sierra Leone	3.9
	Uzbekistan	6.3		Azerbaijan	5.2	140	Burundi	3.8
	Chile	6.2	90	Macedonia	5.2		Zambia	3.8
40	Bahrain	6.2		Ghana	5.1		Haiti	3.7
	Lithuania	6.2		Nepal	5.1		Lesotho	3.7
	Trinidad and Tobago	6.2		Turkey	5.1		India	3.6
	Poland	6.2		China	5.1		Malawi	3.5
	Colombia	6.2		Turkmenistan	5.1		Yemen	3.5
	Cyprus	6.2		Bulgaria	5.1		Botswana	3.5
	Nicaragua	6.1		Morocco	5.1		Tanzania	3.5
	Romania	6.1		Cameroon	5.1		Central African Republic	3.5
	Kuwait	6.1		Venezuela	5.1	150	Rwanda	3.3
	Mauritius	6.1	100	Algeria	5.0		Zimbabwe	3.3
50	Kazakhstan	6.1		Senegal	5.0		South Sudan	2.8
	Estonia	6.0		Guinea	4.9		Afghanistan	2.6

Source: Helliwell et al (2020) Gallup World Poll 2017–2019, Cantril ladder

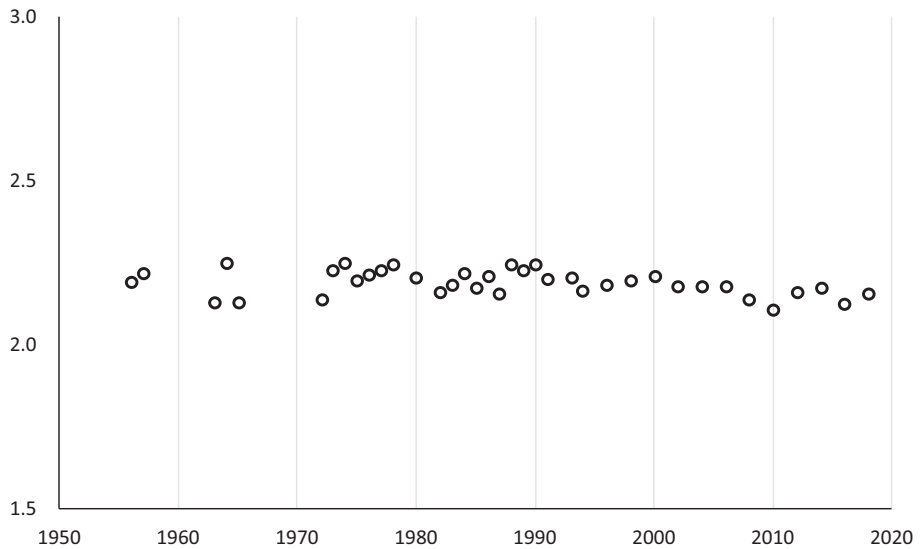


Figure 1.2 Average happiness in the United States (on a scale of 1–3)

Source: AIPO (1956–1970); NORC (1963–1976); GSS (1972–2018) grafted together onto the GSS scale based on overlapping years (see online Annex 1.1)

Hedonic measures based on ‘affect’

Our findings so far are based on people’s replies to a single question about how respondents evaluate their life ‘nowadays’.¹⁸ But some people prefer a different approach to the study of human wellbeing – where we study more directly how people feel at the time. By comparison with this, the evaluative measures cover a longer unspecified period of time and involve an element of judgment (although they are generally completed within a few seconds).¹⁹

The alternative measures are known as **hedonic measures** (from the Greek word *hedone* meaning pleasure). Psychologists use the word ‘affect’ to describe feelings of different sorts. Some types of affect are positive (happiness, enjoyment, laughter) and some are negative (worry, sadness, anger and stress). There are three main ways to capture these feelings. One is in real time by beeping people and asking how they are feeling just now (**Ecological Momentary Assessment**). The second is to sit people down a day later and have them record how they felt on the previous day hour by hour – and what they were doing and who they were with (the **Day Reconstruction Method**). The third, also used by the Gallup World Poll, is to ask them to summarise their different feelings over

¹⁸ There is an obvious issue of what time period people have in mind when they answer this question.

Benjamin et al. (2021) investigate this issue asking people whether they are ‘evaluating their situation’ as it is right now or also as it was in the past or will be in the future. Clearly, how people feel now is affected by things that have happened or may happen. But their answers may still be reflecting their current state of feeling.

¹⁹ Frijters and Krekel (2021).

Table 1.2 Happiness in different activities

Activity	Average happiness	Average hours a day
Sex	4.7	0.2
Socialising	4.0	2.3
Relaxing	3.9	2.2
Praying/worshipping/meditating	3.8	0.4
Eating	3.8	2.2
Exercising	3.8	0.2
Watching TV	3.6	2.2
Shopping	3.2	0.4
Preparing food	3.2	1.1
Talking on the phone	3.1	2.5
Taking care of my children	3.0	1.1
Computer/email/internet	3.0	1.9
Housework	3.0	1.1
Working	2.7	6.9
Commuting	2.6	1.6

Source: Kahneman et al. (2004) Table 1. 900 Texan women

Note: Day Reconstruction Method. Average happiness is measured by the difference between positive affect (0–6) and negative affect (0–6). For similar studies on the United States, see Krueger (2009) and on the United Kingdom, see Bryson and McKerron (2017). For further evidence of the effects of sex on happiness, see Blanchflower and Oswald (2004).

the previous day by asking Yes/No questions like ‘Yesterday did you experience a lot of happiness?’

How people feel when they are doing different things is hugely interesting. A team led by Daniel Kahneman used the Day Reconstruction Method to investigate the feelings of around 900 Texan women during the course of the previous day.²⁰ Table 1.2 shows what they enjoyed most and what they enjoyed least.

Such information is highly relevant to how each of us can improve our daily life.²¹ And, in principle, hedonic measures could be used to produce a single measure of wellbeing over a period of time. You could either pick a single question (such as How happy are you right now, or yesterday) or you can calculate an ‘affect balance’ by adding up all the positive scores and subtracting all the negative ones.²² Or, altogether novel, you can analyse people’s social media activity (especially Twitter) and calculate the balance between positive and negative words or remarks.²³ Or you can analyse Google searches.

Comparison of evaluative and hedonic measures

So which of the two preceding criteria is best for use as a guide to the choice of policies? As we argued at the beginning of the chapter, it self-evidently matters how

²⁰ Kahneman et al. (2004). ²¹ Dolan (2014). ²² Bradburn (1969).

²³ Jaidka et al. (2020). Metzler et al. (2022) show a good intertemporal correlation between text-based and questionnaire-based estimates of SWB. For an interesting analysis of emotions during the COVID-19 pandemic, based on Google searches, see Brodeur et al. (2021).

people feel. This is extremely obvious when it comes to pain versus contentment/enjoyment (the ‘hedonic’ dimension of experience). But it also applies to how people ‘feel about their life’ (the ‘evaluative’ dimension).

As a measure of wellbeing, life satisfaction has many good features. First, it covers more than a day or two.²⁴ Second, researchers and policymakers know what it means – it is based on a single question that they themselves could answer. Third, it is democratic – it does not require analysts to compile a list of indicators and then use their own arbitrary weights to produce an overall index.²⁵ Instead, each citizen applies her own weights and tells us the result – how she feels about her life. And fourth, policymakers are used to asking people how satisfied they are with their services, so why not ask people how satisfied they are with their lives?

Hedonic measures are an even more direct measure of experience, but they are much more difficult to collect over a long enough period to be relevant to many basic social issues. They are, however, essential in analysing brief experiences – like a country walk or a game of tennis or a gig. And, as science develops, they will become easier and easier to measure (including via the use of biomarkers – see Chapter 5). So, in this book, we use both life satisfaction and hedonic measures but mainly life satisfaction. When possible, we report where the two approaches yield different results.²⁶

Eudaimonic measures

The third wellbeing measure in common use is usually called ‘**eudaimonic**’ after the word ‘*eudaimonia*’ used by the Greek philosopher Aristotle. *Eudaimonia* is difficult to translate but it means literally having a ‘good demon’, which Aristotle understood, roughly, as having a rounded and virtuous character.²⁷ So it includes the idea that

²⁴ Answers on life satisfaction are similar on weekdays and weekends, while those on happiness yesterday give higher scores at weekends.

²⁵ Hedonic measures are usually subjected to some form of weights, e.g., to produce a measure of affect balance.

²⁶ When philosophers discuss wellbeing, they generally consider there to be three main theories of what wellbeing is: (i) desire-fulfilment theories, where wellbeing consists in getting what you want; (ii) hedonism, where wellbeing consists in happiness, that is, how good you feel; and (iii) objective list theories, where wellbeing might consist in happiness or desire fulfilment but also consists in some ‘objective’ goods, perhaps achievement, love, knowledge or virtue.

For reasons we have given, we do not accept (iii) – it does not solve the problem of multiple objectives. Our ‘hedonic’ measure is (ii) and so is life satisfaction (unless we consider people to have an overarching desire to be satisfied with their lives).

As regards (i) there is the empirical issue of what people **really** desire. Surveys show that, when asked to make choices, people most commonly, but not always, choose what will make them happy (see, for example Benjamin et al. 2012; and Perez-Truglia 2015). In another study, people were asked to make choices that required pitching happiness against other outcomes like income, health, etc. (Adler et al. 2017) – happiness came top except for health (but in this study there was no distinction between health as quality of life and health as a factor affecting survival). We do not however accept the desire-fulfilment approach since people often make choices which have bad effects.

Thus, we opt for (ii) how people feel, because of its **self-evident** value (i.e., that no further reason can be given for its importance).

²⁷ For a modern empirical definition of eudaimonia see Ryff (1989).

Box 1.1 Different concepts of wellbeing

Type of wellbeing	Typical question(s)
Evaluative	Overall, how satisfied are you with your life nowadays? (0–10)
Hedonic	How happy were you yesterday? Or An hour by hour reconstruction of yesterday recording how you felt (the Day Reconstruction Method) Or Regular real-time bleeping to record your feelings (Ecological Momentary Assessment)
Eudaimonic	Do you feel that the things you do in your life are worthwhile? (0–10)

virtue ought to be included in any measure of wellbeing. A typical question is ‘Do you feel that the things you do in your life are worthwhile?’

There are, however, two objections to this approach. First, virtue is difficult to measure. If you want to know whether someone is virtuous, you cannot find out by asking that person – the Nazis felt that what they did was positive and worthwhile. Second, in the wellbeing approach, virtue is a means to an end.

We want people to be virtuous for two reasons: it will raise the wellbeing of others, and it will often (though not always) raise the wellbeing of the virtuous person. So, for example, in Figure I.1, my wellbeing is higher if

- (i) the people I meet – my ‘social connections’ – are virtuous, and
- (ii) I myself have good altruistic ‘values’.

But these are just some of the many things that determine wellbeing – they are not part of the wellbeing outcome itself. To include virtue in the outcome is to confuse means with ends. We should study virtue deeply, but we should not include it in the measure of wellbeing.²⁸ So, in this book, we do not use the eudaimonic concept of wellbeing.²⁹ We rely mainly on evaluative and hedonic measures of wellbeing, which we also sometimes call happiness. As an aide memoir, Box 1.1 summarises the preceding discussion.

Can we believe self-reports?

As time passes, we shall undoubtedly get better at measuring wellbeing. Neuroscience will improve, and we shall also use more and more big data from sources like Twitter and Google. But do the questionnaires we currently use really supply any useful information? When we ask people these questions, are their answers accurate? Do they really mean anything, or do different people interpret the question and the scales

²⁸ We do urgently need to know how to produce virtuous people (see Chapter 3). But this is a different issue from the definition of wellbeing.

²⁹ It is in fact highly correlated with evaluative wellbeing. See Keyes et al. (2002), Model 4; and Ryff and Singer (2003).

so differently that their answers cannot really be compared? In other words, are the measures ‘reliable’ and ‘valid’ evidence on the thing they purport to measure.

On **reliability**, the question is ‘Do people give consistent answers when retested?’ In one study, the correlation between the two sets of answers two weeks apart was 0.55 for life satisfaction and 0.64 for net affect.³⁰ This is not bad, but it shows that there is some noise in the data.

A quite different issue is whether the scale is a ‘**valid**’ representation of what we want it to represent, including whether different people use the scale in the same way³¹ There are at least four reasons to believe that people’s answers provide significant objective information about how their subjective wellbeing compared with that of other people in the same country.

Correlation with brain activity

First, how people score their subjective wellbeing is correlated with objective measures of electrical activity in certain parts of the brain (see Chapter 5). The same is true of their reporting of physical pain. In a fascinating experiment, researchers applied an equally hot pad to the legs of all the people being studied. People were asked to rate the pain, and the resulting scores were then correlated across people with the electrical activity in the relevant part of the pre-frontal cortex. The correlation was good.³² In addition, over time within the same individual over time, there is a good correlation between the wellbeing she reports and objective measurement of her brain waves.³³

Correlation with third-party reports

Second, we can ask the friends or colleagues of the individual to rate the person’s happiness. These ratings are quite well-correlated with the individual’s own self-reports.³⁴ Another study investigated the relationship between smiling and life satisfaction. Researchers rated the positive affect displayed in the most recent Facebook profile photo of those being studied, and this was quite well correlated with their self-reported life satisfaction.³⁵

Predictive power

Next, these self-reports are good predictors of many aspects of future behaviour, like quitting a job, divorce or voting behaviour. They are even a good predictor of individual life expectancy. These findings are so important that we describe them in more detail at the end of the chapter.

Explicability

And, finally, we can explain a good part of the variation in these measures by precisely the kind of things one would expect to matter. That is what makes the study of wellbeing so exciting.

³⁰ Krueger and Schkade (2008). See also Fujita and Diener (2005).

³¹ For an economist’s discussion of the issue of comparability, see Sen (1970).

³² Coghill et al. (2003); and Coghill (2010). ³³ Davidson (2004). ³⁴ Diener and Suh (1999).

³⁵ Seder and Oishi (2012) $r = 0.38$. The correlation with life satisfaction 3 years later was even higher ($r = 0.57$).

So we have good evidence that different people in the same country report their feelings in a similar way. We also have evidence that the same person reports her feelings in a similar way over time. However, do people in **different countries** report their feelings in the same way or are international comparisons highly unreliable? After all, people are reporting in different languages and many words do not have exact equivalents in other languages. There are, however, three reasons to believe that the country rankings do indeed correspond to real differences out there.³⁶

- The rankings are similar across a whole range of words – like happiness in life, satisfaction with life and position on the Cantril ladder.
- Within a country, people speaking different languages (e.g., in Switzerland) give very similar answers, and these differ from the average of other countries using the language (e.g., the French compared with French-speaking Swiss).
- Which language-group a country belongs to adds little to a standard explanation of the wellbeing in that country.

The reporting scale

A different issue is exactly how people use the reporting scale they are offered (0,1, . . . ,9,10). Do they treat it like a metre rule, where the difference between 3 and 4 centimetres is the same size as the difference between 8 and 9 centimetres? This practice would make the scale an **‘interval scale’** (or what economists call a **‘cardinal scale’**). Or do the points on the scale simply reflect a **ranking** of different mental states (making it an **‘ordinal scale’**)?

So what would it mean to say the scale is cardinal? If we want to measure differences in the level of a sensation, the standard basic unit of difference is one that is just noticeable by the person experiencing it. In other words, the natural unit for sensations is the **just-noticeable difference (JND)**.³⁷ So we would call a scale an interval scale (or cardinal) if the number of JNDs between the answer 3 and the answer 4 were the same as the number of JNDs between 8 and 9.

Are they? There is a simple empirical test of whether the scale is cardinal: when people are asked and then re-asked to record their life satisfaction (0–10), the average absolute difference in replies should be similar at all points on the scale. It is.³⁸ So there is good reason to suppose that people use the scale in a cardinal way, as we have defined it – apparently, respondents naturally reply as though the difference between 3 and 4 is as noticeable as the difference between 8 and 9.

We have already mentioned another relevant fact. Sometimes people are asked to score a variable not by selecting an integer but by selecting a point on a continuous scale (the ‘visual analogue’ method). Studies of the kind give very similar regression results to those using integer scales.³⁹

³⁶ Veenhoven (2012). See also Diener et al. (1995). It is sometimes suggested that people re-norm the scale in the light of experience. Evidence against this is presented in Odermatt and Stutzer (2019).

³⁷ See, for example, Stevens (1986), chapter 1 (not an easy read). ³⁸ Kruger and Schkade (2008).

³⁹ See footnote 7.

Box 1.2 'Reporting functions' in psychology

The study of sensations assumes that humans report their sensations in a cardinal fashion. It then addresses the question: How does their sensation relate to the intensity of **external** phenomena – like brightness? In other words, what is the 'reporting function' that relates the reported sensation to the external stimulus (measured in its own units)? For example, how does the reported brightness of light relate to its actual brightness measured in lumens per square metre of receiving surface?

In this case, the just-noticeable difference (JND) in brightness corresponds to a given proportional change in actual brightness (measured in lumens per square metre). Thus the 'reporting function' for brightness is

$$\text{Sensation} = a \log \text{Brightness}$$

This is known as the Weber–Fechner effect. Similar 'reporting functions' have been found for the intensity of sound and indeed for many other things that can vary over a huge range from 0 upwards. But when the range of variation is narrow relative to the average (as with human height), the reporting function becomes roughly linear.⁴⁰

These reporting functions are telling us how people report on an **external** phenomenon. When it comes to wellbeing, we are talking about something quite different – how people record an **inner** state. There is no obvious reason why they would not do this in the cardinal way we have described, and the science of psychophysics assumes they do so.

So, when psychologists study sensations, they generally assume people treat the scale as cardinal (see Box 1.2 for further details). By contrast, it is difficult to see how respondents could use the scale (0–10) in an ordinal fashion. There would have to be a ranking of all their possible states of wellbeing, and they would then somehow divide this up into eleven ranges (0–10). However, since there is no concept of distance between one state and another, it is extremely difficult to see how they would undertake this process in any way that is consistent over time or across people.⁴¹

So we shall assume throughout this book that different individuals use the scale in the same way, that the scale used is stable from period to period and that the scale is a normal one (like a metre rule).

What causes wellbeing?

So what determines their wellbeing? If we want to improve wellbeing (for ourselves or others), we have to know what affects it and by how much. To find this out we have

⁴⁰ Oswald (2008).

⁴¹ For a different view on all this, see Bond and Lang (2019). And for a response to Bond and Lang, see Kaiser and Vendrik (2020).

two main sources of **evidence**. The first is **surveys** in which people are asked about their wellbeing – but also about many other aspects of their life. The relationship between wellbeing and these other things tell us how much different things matter to people. But precise causality is always difficult to establish from such surveys, nor do they tell us in any detail what we can do to make things better. For this, we need evidence from **experiments** where some people have received a particular treatment and their change in wellbeing can then be compared with that of a control group. In the last 40 years, evidence of both types has developed at such a rate that we now have the new science of wellbeing, whose findings are the subject of this book.

What Use Is This Knowledge?

This knowledge gives us the power to produce huge improvements in human wellbeing. It helps us as individuals to manage our external life and our own inner experience. It gives new purpose to organisations like schools and businesses. And it provides a whole new framework for the conduct of government.

In each case it works in two stages. First, it helps to set **priorities** by providing an overall goal against which to test out various options. This goal is the greatest wellbeing possible in ourselves and those around us. Secondly, the evidence provides detailed information about which **specific actions** work best in terms of wellbeing.

- (i) For **individuals** it offers a perspective on what matters most. Though individuals differ, it shows how we all make systematic mistakes based on the excessive reliance on some issues (like money). It shows how we all suffer from excessive comparisons with others and how we can educate our own mind-sets to generate more compassion for ourselves and for others. Armed with these tools, we can contribute more to the lives of others both in our private lives and through our work. For we now have a moral compass and knowledge about how to use it.
- (ii) For **organisations** like schools and businesses, it provides a test of whether they are performing the functions that justify their existence. For example, it shows how most schools need to give more attention to the wellbeing of the children relative to their exam results – and provides experimental evidence on how to produce happier children. For business, more and more CEOs now consider that business exists to promote the wellbeing not only of shareholders but also of workers, customers and suppliers.⁴² There is now good experimental evidence on how to do this.
- (iii) For **governments**, it provides for the first time a coherent objective. For too long, countries have talked as though economic growth was their overriding objective, though in truth they had multiple objectives that they could not compare. Now for the first time there is a coherent and measurable overall objective – the wellbeing of the people. This is not a new idea. As Thomas Jefferson said, ‘human life and

⁴² US Business Roundtable (2019). On work and wellbeing, see Chapter 12.

happiness is the only legitimate object of government'.⁴³ But until recently, the information to apply this principle was not available. Now it is, and as we shall see, countries are increasingly applying it. And there are now more and more experiments to test which policies are the most cost-effective in terms of their impact on wellbeing. For those who believe that wellbeing is the ultimate objective, this is an exciting prospect, bringing hope to millions and new and worthwhile career opportunities.

Wellbeing helps us achieve other valuable objectives

There are, however, many people who question the idea of wellbeing as the objective. We shall discuss this issue in Chapter 2. But even people who do not value wellbeing for its own sake should value wellbeing because it is an important means to many other objectives that they do value. Here are some striking examples.

- **Education.** Making children happier makes them learn better.⁴⁴
- **Health.** Your wellbeing has a powerful effect on your longevity.⁴⁵
- **Productivity.** Greater wellbeing increases productivity and helps with problem-solving.⁴⁶
- **Family/Social cohesion.** Happy people create more stable families, and happy people are more pro-social.⁴⁷
- **Political stability.** Wellbeing affects election outcomes more than the economy does. And unhappy people tend to support populist parties.⁴⁸
- **Charitable giving.** Happy people give more to others.⁴⁹

These consequences of wellbeing are of major importance. So throughout this book we shall discuss the two-way relation between wellbeing and the different aspects of human life.

To re-cap, the two relations are these:

- One relation is the effect of each aspect of life on overall wellbeing. This was displayed in Figure I.1, with the arrows pointing towards wellbeing.
- The other relation is the effect of wellbeing on each aspect of life. This involves a diagram just like Figure I.1 but with the arrows pointing in the opposite direction.

In this book, we look at both sets of effects, but our strongest interest is in the first relation: how wellbeing itself is determined.

⁴³ Jefferson (1809).

⁴⁴ The best evidence comes from interventions to improve wellbeing. See Durlak et al. (2011); Hanh and Weare (2017); Adler (2016); and Frederickson and Branigan (2005).

⁴⁵ For UK data, see Steptoe and Wardle (2012). On the United States, see Lee and Singh (2020).

⁴⁶ Bellet et al. (2020); Edmans (2012); Isen et al. (1987). ⁴⁷ Idstad et al. (2015).

⁴⁸ Ward (2020) and Ward et al. (2020) show that incumbent governments do worse when people are less happy. On populism, see Nowakowski (2021).

⁴⁹ Kessler et al. (2021).

Human needs

So let's examine some basics about how wellbeing is determined and use this to explain the structure of the book. There is evidence that all human beings have similar **fundamental needs**⁵⁰ and that their wellbeing can be (at least partly) explained by how well these needs are met.

A typical list of these needs includes:

- Food and shelter,
- Safety from attack,
- Love and support,
- Respect and pride,
- Mastery of what you do,
- Autonomy in what you choose to do.

Since 2005, the Gallup World Poll has surveyed representative samples of people in every country in each year. It asks about their life satisfaction and also whether their different needs are met.⁵¹ The analysis confirms that satisfaction with life increases when more of these needs are met – and people are more satisfied both when their own needs are met and those of their fellow citizens. This confirms a common finding that wellbeing is contagious.⁵²

But are some of these needs prior in importance to others? For example, if your life is physically hard, how important is it to experience respect and pride? According to Maslow,⁵³ there is a hierarchy of needs (proceeding upwards from Physiological to Safety, Love and Belonging, Esteem and ultimately Self-actualisation): and the best strategy is to satisfy the needs by progressing up the sequence. Thus 'respect is a disposable luxury when compared with food or safety'. Though hugely famous, there is little supporting evidence for Maslow's hierarchy. The evidence from the Gallup World Poll is that when each need is satisfied, wellbeing improves. But having one need satisfied has little effect on the value of satisfying another need.⁵⁴

How people interact with their environment

This book is about what determines how far our needs are satisfied. A first answer to that question is that it depends on the interaction between our genes (with which we enter the world) and our external environment – meaning by external environment the whole social and physical world outside ourselves. This is illustrated in Figure 1.3.

⁵⁰ Brown (1991).

⁵¹ See Tay and Diener (2011). The questions are binary (Yes/No). For food and shelter: enough money for food and shelter and did not go hungry. For safety: safe walking alone, nothing stolen nor assaulted in the last 12 months. For love and support: experienced love yesterday and have someone to count on. For respect and pride: treated with respect and proud of something. For mastery: did what you do best at work, learned something. For autonomy: chose how best to spend your time, and experienced freedom. These are similar to the basic needs identified by Maslow (1954); Deci and Ryan (2000); Ryff and Keyes (1995); and Sen (1999).

⁵² See, for example, Fowler and Christakis (2008). ⁵³ Maslow (1948). ⁵⁴ Tay and Diener (2011).

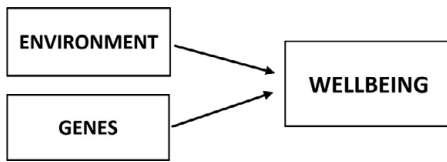


Figure 1.3 How genes and external environment determine wellbeing

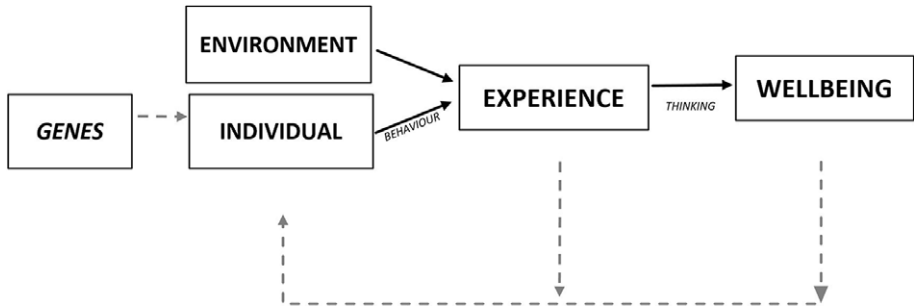


Figure 1.4 How the individual and the external environment interact to produce wellbeing

But this gives the impression that the individual herself is a passive player in the drama, with the environment simply interacting with the person’s genes to produce the outcome. Yet in fact every human being has some degree of **agency**. We influence our own wellbeing in two key ways:

- By our **behaviour**, we significantly influence the situations we experience and the behaviour of others towards us.
- By our **thoughts**, we influence how these experiences affect us – both through our attitudes and how we think about our life.

Figure 1.4 tries to capture some of this. Outside us there is a given social environment, but how we experience it is hugely affected by what we bring to it. So the individual’s behaviour interacts with the environment to produce the individual’s experience. This experience then affects the individual’s wellbeing – but how much depends also on how she thinks. This process is repeated over and over again. At each phase, the person’s wellbeing feeds back into her character and behaviour in the next phase of her life (as shown in the dotted lines).

From this analysis it is clear that our wellbeing does not only depend on our social environment. It also depends on what we bring to the table, in particular

- our behaviour,
- our thinking and
- our genes.

In Chapters 3–5, we discuss each of these processes, before we discuss the details of the environment in Part III of the book.

What kind of a subject is wellbeing science?

Finally, what kind of a subject is wellbeing science? It is a new, emerging field, which is totally interdisciplinary. Many of the most important subjects that have emerged in recent years are interdisciplinary – subjects like molecular biology or human geography. But this one is rather special, because it provides a rationale for each of the separate social sciences: they are only important because they help to explain wellbeing. If you look at Figure I.1, you will see what we mean. For example, international relations are important because of how they contribute to human wellbeing, and so on. In this sense, wellbeing science could be the queen of the social sciences: it gives a role to each science by showing quantitatively how its own outcomes contribute to the overall good.

But, as we shall see in the chapters that follow, there are four key disciplines that are most central to the study of wellbeing: psychology, sociology, economics and statistics.

- **Psychology.** The study of wellbeing started in psychology.⁵⁵ Psychologists study how human nature works at the individual level, using both surveys and experiments. They study how individual personality, family experience and education affect wellbeing. They also study how to make things better for individuals (clinical psychology) and at work (occupational psychology). However, except for social psychology, psychologists tend to ignore the role of social norms and social structures upon human wellbeing.
- **Sociology.** That is where sociologists come in. They study, above all, the way people interact in groups and how that affects their wellbeing.
- **Economics.** Economics brings four main contributions. First, economists have always focused on wellbeing as the overarching outcome (calling it ‘utility’), even though they often have a rather narrow view of it and what causes it. Second, they discuss policy in terms of maximising that single outcome. Third, they distinguish clearly between the things people choose and the things that just happen to them (which they call ‘externalities’). And fourth, they bring understanding of markets, income and unemployment.
- **Statistics.** This is central to the preceding disciplines. When it is used to analyse the distribution of characteristics in a population, it is sometimes called epidemiology.

There are three other fields of study, which, though relevant, are not the same as the science of wellbeing.

- **Behavioural science.** In recent years, economists have been developing, jointly with psychologists, a deeper understanding of how people actually behave – a subject sometimes known as behavioural economics. But the study of wellbeing is a different endeavour. It does not study how to get people to behave in a certain way. It studies the results of behaviour and thus which behaviours would maximise social wellbeing.

⁵⁵ Some key figures were Hadley Cantril (1906–1969) and Angus Campbell (1910–1980) – see Cantril (1965) and Campbell, Converse and Rodgers (1976).

- **Health and wellbeing.** This phrase, increasingly used, signifies a welcome extension of health science to include mental states as well as physical conditions. But it does not typically view wellbeing as the overarching good, with health as just one of many influences upon it. Wellbeing science, in contrast, studies the effects of everything in life upon the wellbeing of the population.
- Finally, **philosophy.** ‘What is wellbeing?’, ‘Is it all that matters?’, ‘How should it be distributed?’, and so on, are, of course, philosophical issues. We turn to these issues in Chapter 2. After that, the rest of the book is about the science of what causes wellbeing and how it can be improved.

Conclusions

- (1) For many people, the reason to study wellbeing is the belief that it is the only thing that ultimately matters.
- (2) In this view, many other things are good, like health, freedom, income and so on, but they are good because (and only because of) how they affect wellbeing.
- (3) By wellbeing we mean subjective wellbeing – how people feel. This can be measured in three different ways:
 - Evaluative: how people feel about their life nowadays
 - Hedonic: how people feel at each moment
 - Eudaimonic: whether people believe their life is worthwhile
 The most commonly-used measure is evaluative, for example, ‘satisfaction with life’, but we shall also use hedonic measures where these are relevant.
- (4) Evaluative wellbeing differs hugely across countries and within countries, while hedonic wellbeing also varies across activities.
- (5) There is good evidence that these measures are reliable and valid. They are correlated with objective brain measurements, with third-party reports, with many consequences (like longevity, voting, productivity and learning) and with many plausible causes (which is mainly what the book is about).
- (6) Most human beings have similar fundamental needs and their wellbeing varies with how well these needs are met. However, people are not passive agents, simply affected by their environment. Their own behaviour affects what they and others experience. And their own thoughts mediate how these experiences affect their wellbeing.

So Chapters 2–5 deal with

- The overall objective for society
- The role of behaviour
- The role of thoughts
- The role of genes and the working of our bodies.

These are all issues of basic human nature.

Then in Part III we turn to the hugely different experiences that different people have and how they affect our wellbeing – the role of family life and schools,

healthcare, employment, the quality of work, income, social connections, the physical environment and climate and government. We look at their effect and at how well-being could be improved in each of these dimensions. Finally, we look at the techniques of policy-making and show how every policy-maker could use wellbeing data to produce a better world.

Questions for discussion

- (1) Is there anything more important than how we feel? Is wellbeing the overarching goal? If not, what is, and how should we weight multiple goals?
- (2) What is the best way to measure wellbeing? Are these measurements ‘cardinal’?
- (3) How does wellbeing science relate to other subjects you have studied?

Further Reading

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- World Happiness Report, New York: Sustainable Development Solutions Network. Chapter 2 of the latest report.

