What is a Happiness Equation?

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Happiness research has grown remarkably in the last few years.

Reasonably enough, most people who encounter the field for the first time ask the question: well how on earth can you study happiness anyway?

This work is normally done in the following way. First, take a large random sample of people. Second, ask each of those individuals to give an answer to a question like "Taking everything into account, how happy do you feel with your life?" where people can answer on a scale from, say, a low of 1 to a high of 7. Third, ask these same people many other questions, such as their age, gender, marital status, job type, earnings, educational qualifications, and so on.

By using normal statistical methods (of the sort used to study how smoking or eating fresh vegetables affects the chance of long life, say), it is straightforward to examine the patterns in people's happiness answers.

What you eventually get from all of this is a kind of happiness equation. We find, not surprisingly, that mental wellbeing depends on a whole list of factors. Crucially, in this research it is possible to calculate the <u>separate</u> effects on happiness of being married compared to having a high income compared to having lots of friends compared to living in Scotland compared to having a long commuting time, and so on, and on.

Various sensible objections come to mind.

One is that, surely, asking a simple happiness question of this type produces special answers, and ones that are not very believable? In fact, the research indicates that this worry seems to be incorrect. It does not matter a great deal what the exact wording is.

What appears to be going on, when human beings give answers in these surveys, is that they are providing a rough sense of the quality of their own life as they themselves perceive it; the precise language of the question does not turn out to make a big difference.

Intriguingly, the structure of happiness equations seems strikingly similar across the world and largely unaffected by the exact wording of survey questions.

Another natural objection is probably the most famous in the whole of social science (and perhaps even science). Can we really sort out cause-and-effect here? The latest evidence suggests that we can. One way of doing so is to follow the same people through time -- and watch what happens to their mental wellbeing as good and bad events strike them. Then we can measure longitudinally the changes in happiness in response to things like marrying, becoming disabled, winning money in a lottery, etc.

Finally, we have developed ways to put monetary values on the good and bad events in life. It is harder to explain intuitively exactly how that is done, but think of the different points on the happiness scale that people are given. They can answer from a low of 1 to a high of 7. By averaging across everyone's answers, it is then possible to work out (i) that, say, an extra 40,000 pounds a year will move people on average up the happiness scale by one point, and (ii) that being married rather than single gives people one and a half points on the same happiness scale.   Then, on average, the happiness 'value' of marriage is 60,000 pounds a year.

Early pioneers in wellbeing research were Richard Easterlin (from economics) and Ed Diener (from psychology).   They and other happiness researchers can be found on the Web. To the best of my knowledge, it was Easterlin who first pointed out using statistical

evidence that economic growth is not making western societies happier.

What of policy and practical matters? My judgment is that we are some way from being able to make prescriptions for politicians from this line of inquiry. The researchers I know who do this work are interested in understanding what makes humans smile or frown. This is blue-skies research, in more ways than one. It will very probably lead to important policy implications. But currently we cannot be sure what those will be.

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An Example of a Happiness Equation (from "Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges", written jointly with N. Powdthavee)

Overleaf

Table 2: OLS Life Satisfaction Equations with Past Disability Variables

	I		II		III		IV	
Disabled; able to do day-to-day activities	-0.464	(0.112)	-0.281	(0.125)	-0.598	(0.169)	-0.473	(0.157)
Disabled; unable to do day-to-day activities	-1.144	(0.052)	-0.902	(0.062)	-1.228	(0.081)	-1.265	(0.084)
Past disability from t-3 to t-1 (3 yrs)	-	-	-0.369	(0.073)	-0.827	(0.095)	-	-
Disabled; able*past disability (3 yrs)	-	-	-	-	1.106	(0.277)	-	-
Disabled; unable*past disability (3 yrs)	-	-	-	-	0.960	(0.149)	-	-
Past disability from t-6 to t-1 (6 yrs)	-	-	-	-	-	-	-0.824	(0.103)
Disabled; able*past disability (6 yrs)	-	-	-	-	-	-	0.876	(0.295)
Disabled; able*past disability (6 yrs)	-	-	-	-	-	-	0.957	(0.159)
Unemployed	-0.544	(0.039)	-0.541	(0.043)	-0.524	(0.043)	-0.528	(0.046)
Self-employed	0.017	(0.028)	0.019	(0.029)	0.021	(0.029)	0.025	(0.030)
Look after home	-0.153	(0.031)	-0.141	(0.034)	-0.132	(0.034)	-0.128	(0.034)
Retired	0.011	(0.032)	0.047	(0.034)	0.071	(0.034)	0.070	(0.035)
Student	0.011	(0.030)	-0.004	(0.033)	-0.001	(0.033)	-0.017	(0.035)
Real household income per capita (*1,000)	0.008	(0.001)	0.008	(0.001)	0.008	(0.001)	0.007	(0.001)
Male	-0.026	(0.016)	-0.012	(0.017)	-0.012	(0.017)	-0.016	(0.017)
Age	-0.123	(0.010)	-0.125	(0.011)	-0.124	(0.011)	-0.126	(0.011)
Age^2/100	0.234	(0.021)	0.237	(0.022)	0.235	(0.022)	0.241	(0.023)
Age^3/100	-0.001	(0.000)	-0.001	(0.000)	-0.001	(0.000)	-0.001	(0.000)
Married	0.382	(0.027)	0.384	(0.030)	0.384	(0.030)	0.399	(0.030)
Living as a couple	0.302	(0.027)	0.283	(0.030)	0.286	(0.030)	0.315	(0.031)
Separated	-0.419	(0.057)	-0.420	(0.064)	-0.419	(0.063)	-0.386	(0.066)
Divorced	-0.144	(0.045)	-0.119	(0.048)	-0.116	(0.048)	-0.111	(0.049)
Widowed	0.061	(0.046)	0.082	(0.049)	0.082	(0.049)	0.106	(0.050)
Education: O-Level, A-Level	-0.048	(0.021)	-0.049	(0.023)	-0.049	(0.023)	-0.047	(0.023)
Education: Higher	-0.081	(0.022)	-0.076	(0.024)	-0.077	(0.024)	-0.072	(0.024)
Household size	0.006	(0.008)	0.009	(0.008)	0.009	(0.008)	0.005	(0.009)
Own home outright?	0.135	(0.020)	0.128	(0.021)	0.127	(0.021)	0.120	(0.022)
Days spent in hospital last year	-0.012	(0.001)	-0.012	(0.001)	-0.012	(0.001)	-0.013	(0.001)
Number of children	-0.030	(0.012)	-0.035	(0.013)	-0.037	(0.013)	-0.037	(0.013)
Constant	6.934	(0.156)	6.946	(0.168)	6.927	(0.168)	6.990	(0.171)
Round dummies	Yes		Yes		Yes		Yes	
Region dummies	Yes		Yes		Yes		Yes	
N	52,973		52,973		52,973		44,405	
R-squared	0.0952		0.0947		0.0967		0.1002	

Note: Past disability measures the proportion of time the respondent spent being disabled prior to the inview date. Hence, past disability (3 years) takes the values of 0, 0.33, 0.66, and 1, whilst past disability (6 years) takes the values of 0, 0.17, 0.33, 0.5, 0.66, 0.83, and 1. Reference variables are: employed, female, never married, no formal education, and do not own home outright. Real household income per capita is income per annum, deflated by CPI. Standard errors are in parentheses.