

Schwandt, Hannes

Working Paper

Unmet aspirations as an explanation for the age U-shape in human wellbeing

SOEPpapers on Multidisciplinary Panel Data Research, No. 580

Provided in Cooperation with:

German Institute for Economic Research (DIW Berlin)

Suggested Citation: Schwandt, Hannes (2013) : Unmet aspirations as an explanation for the age U-shape in human wellbeing, SOEPpapers on Multidisciplinary Panel Data Research, No. 580, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin

This Version is available at:

<https://hdl.handle.net/10419/83489>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

SOEPpapers

on Multidisciplinary Panel Data Research

SOEP – The German Socio-Economic Panel Study at DIW Berlin

580-2013

Unmet Aspirations as an Explanation for the Age U-shape in Human Wellbeing

Hannes Schwandt

SOEPPapers on Multidisciplinary Panel Data Research at DIW Berlin

This series presents research findings based either directly on data from the German Socio-Economic Panel Study (SOEP) or using SOEP data as part of an internationally comparable data set (e.g. CNEF, ECHP, LIS, LWS, CHER/PACO). SOEP is a truly multidisciplinary household panel study covering a wide range of social and behavioral sciences: economics, sociology, psychology, survey methodology, econometrics and applied statistics, educational science, political science, public health, behavioral genetics, demography, geography, and sport science.

The decision to publish a submission in SOEPPapers is made by a board of editors chosen by the DIW Berlin to represent the wide range of disciplines covered by SOEP. There is no external referee process and papers are either accepted or rejected without revision. Papers appear in this series as works in progress and may also appear elsewhere. They often represent preliminary studies and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be requested from the author directly.

Any opinions expressed in this series are those of the author(s) and not those of DIW Berlin. Research disseminated by DIW Berlin may include views on public policy issues, but the institute itself takes no institutional policy positions.

The SOEPPapers are available at
<http://www.diw.de/soeppapers>

Editors:

Jürgen **Schupp** (Sociology)

Gert G. **Wagner** (Social Sciences, Vice Dean DIW Graduate Center)

Conchita **D'Ambrosio** (Public Economics)

Denis **Gerstorff** (Psychology, DIW Research Director)

Elke **Holst** (Gender Studies, DIW Research Director)

Frauke **Kreuter** (Survey Methodology, DIW Research Professor)

Martin **Kroh** (Political Science and Survey Methodology)

Frieder R. **Lang** (Psychology, DIW Research Professor)

Henning **Lohmann** (Sociology, DIW Research Professor)

Jörg-Peter **Schräpler** (Survey Methodology, DIW Research Professor)

Thomas **Siedler** (Empirical Economics)

C. Katharina **Spieß** (Empirical Economics and Educational Science)

ISSN: 1864-6689 (online)

German Socio-Economic Panel Study (SOEP)
DIW Berlin
Mohrenstrasse 58
10117 Berlin, Germany

Contact: Uta Rahmann | soeppapers@diw.de

Unmet Aspirations as an Explanation for the Age U-shape in Human

Wellbeing

Hannes Schwandt*

Princeton University

August 2013

A large literature in behavioral and social sciences has found that human wellbeing follows a U-shape over age. Some theories have assumed that the U-shape is caused by unmet expectations that are felt painfully in midlife but beneficially abandoned and experienced with less regret during old age. In a unique panel of 132,609 life satisfaction expectations matched to subsequent realizations, I find people to err systematically in predicting their life satisfaction over the life cycle. They expect -- incorrectly -- increases in young adulthood and decreases during old age. These errors are large, ranging from 9.8% at age 21 to -4.5% at age 68, they are stable over time and observed across socio-economic groups. These findings support theories that unmet expectations drive the age U-shape in wellbeing.

JEL classification: A12, I30, D84

Keywords: life satisfaction, expectations, aging

* Center for Health and Wellbeing, Princeton University, Princeton, 08542 NJ, USA; Email: schwandt@princeton.edu, +1 609-258-8272; Centre for Economic Performance, Wellbeing Programme, London School of Economics, Houghton Street, London WC2A 2AE;. Institute for the Study of Labor (IZA), 53113 Bonn, Germany.

Acknowledgements:

I am thankful to Ada Ferrer-i-Carbonell, Robin Hogarth and Andrew Oswald for guidance and advice on this project as well as to Janet Currie, Guy Mayraz, Johannes Müller-Trede, Hannes Wiese and Tali Sharot for helpful comments.

Part of this research has been conducted at the Center for Economic Performance (CEP), London School of Economics, and I am grateful to Richard Layard for making this research affiliation possible. A CEP discussion paper version of this study can be found at <http://cep.lse.ac.uk/pubs/download/dp1229.pdf>.

1. Introduction

Behavioral and social scientists have shown increasing interest in self-reported life satisfaction and other subjective indicators as measures of human wellbeing (1-3). Using these measures a large and emerging literature has established that wellbeing follows a U-shape over age (4-8). Even though some controversy remains over the existence of this U-shape (9), it has been observed in over 50 nations (4), across socio-economic groups (5) and recently also for great apes (7). Little is known about its origins (7). One theory (8) is that the U-shape is driven by unmet aspirations which are painfully felt in midlife but beneficially abandoned later in life. A complementary theory builds on the neuroscientific finding (10) that the emotional reaction to missed chances decreases with age so that the elderly might feel less regret about unmet aspirations.

Assuming that regret about unmet aspirations drives the U-shape implies that people err dramatically in predicting their wellbeing over the life-cycle. When young, people expect a bright future though actual wellbeing decreases. In old age expectations are adjusted downwards though actual wellbeing is rising. Human belief formation is known to exhibit systematic biases such as optimism (11-15) and the underestimation of hedonic adaptation to changes in life circumstances (16, 17). However, existing literatures typically analyze specific forecast settings with less emphasis on overall wellbeing measures or the role of age. The extent to which people err in predicting changes in their wellbeing over the life-cycle is unknown.

This paper examines whether people make systematic errors when thinking about their wellbeing in five years time and how these errors change with age. Results are based on a unique data set from the German Socio-Economic Panel (SOEP) that includes both respondents' current life satisfaction as well as their expectations about life satisfaction in five years. The panel structure of the SOEP allows an individual's expectation in a given year to be matched to the same individual's realization five years ahead to form individual specific forecast errors..

The SOEP is a representative annual survey that started in West-Germany in 1984 and includes East-Germany since 1990. Current life satisfaction is reported in all years

while expected life satisfaction is included from 1991 to 2004. The wording of the questions, translated from German, is:

Please answer according to the following scale: 0 means 'completely dissatisfied', 10 means 'completely satisfied':

- *How satisfied are you with your life, all things considered?* [1]
- *And how do you think you will feel in five years?* [2]

It is important to distinguish self-reported life satisfaction from other subjective wellbeing measures (18). For example, the findings of this paper might not carry over to reports of momentary emotional affect. However, life satisfaction might be of particular interest in the context of wellbeing forecasts. Recent experimental evidence (19) indicates that people tend to choose those life circumstances for which they predict the highest future life satisfaction rather than the most pleasant future hedonic experience.

2. Results

The sample used in this study is all those respondents between the ages of 17 and 85 who responded to question [2] in the waves 1991 to 2002 and to question [1] five years later. The resulting sample consists of 23,161 individuals for whom a total of 132,609 life satisfaction forecast errors were constructed. Descriptive statistics are provided in Table A1.

Figure 1A plots people's expected life satisfaction in five years averaged over age at the forecast, ranging from age 17 to 85, and the same sample's current life satisfaction five years ahead at ages 22 to 90. In line with the existing literature (4-8) current life satisfaction is U-shaped between ages 20 and 70, with peaks around ages 23 and 69, a local minimum in the mid-50s and a further decline after age 75. As the plot of life satisfaction expectations shows, this U-shape is not anticipated. During young adulthood people expect their life satisfaction to increase strongly. With age, expectations decrease but remain above current life satisfaction until the late 50s when the two graphs coincide. Thereafter expectations remain stable while actual life satisfaction increases, indicating

that people do not anticipate the increase in old age wellbeing. After age 75 expectations decrease, simultaneously with current life satisfaction.

These different patterns in current and expected life satisfaction imply systematic forecast errors that change with age (Fig. 1B). Young adults in their 20s overestimate on average their future life satisfaction by about 0.7, or by about 10% (e.g. 0.685 ± 0.047 or 9.8% at age 21, Table A5). After age 30 forecast errors decrease steadily, turning negative at age 55 and decreasing further until age 68 (-0.308 ± 0.057 ; or -4.52%) where after they remain at around -0.25.

Confidence intervals are small, indicating that means are estimated precisely. They only widen after age 75 when mortality reduces the size of these cohorts. Sample selection due to increased mortality could be responsible for the negative forecast errors observed during old age. Mortality might particularly exclude those who strongly overestimated their future wellbeing. However, mortality rates increase exponentially during old age (Fig. A1). Thus, if mortality affected average forecast errors there should be a strong decrease in errors during old age. This is not the case.

A third order polynomial of age provides a good fit for this age pattern, explaining 97.2% of the variation in average forecast errors (Table 1, column 1). Constructing forecast errors and averaging them over individuals implies strong assumptions regarding the cardinality of expected and current life satisfaction. In line with previous research (20), the findings do not depend on this cardinality assumption. Binary indicators of positive or negative forecast errors which treat life satisfaction as an ordinal measure yield qualitatively identical results (Fig. A2, Table A8).

To establish a systematic age bias it is important to show that forecast errors are not driven by a certain time period or birth cohort. As Fig. 2A shows, forecast errors were significantly higher in the aftermath of the German reunification, 1991-1993, and around the New Economy stock market bubble, 1998-2002 than in the intervening years (0.287, $p < 0.001$ and 0.294, $p < 0.001$, resp.; Table A3 a-b). The age pattern, however, is highly stable across all periods. As the R^2 in Table 1 cols. (2)-(4) indicates. forecast errors in 1991-1993 predict 89.1% of the variation in average forecast errors in 1994-1997 and 96.7% in 1998-2002. Plotting the data by birth cohorts (Fig. A3) shows that the age pattern is not driven by cohort effects either. The age pattern occurs within rather than across cohorts.

Figure 2B plots forecast errors over the life-cycle separately for East- and West-Germany. The pattern looks remarkably similar across these two regions that were economically and culturally different in the aftermath of German Reunification (21). Below age 55, forecast errors are not significantly different between regions, and only slightly more negative in East Germany above age 55 (-0.088, $p < 0.001$, Table A3 c-d). As shown in Fig. 2C age effects are also similar by gender. Below age 55, the gender difference is small and insignificant, while forecast errors are slightly more negative for males above age 55 (-0.044, $p = 0.044$, Table A3 e-f).

Surprisingly, the life-cycle pattern is more pronounced for the more educated (Fig. 2 D). People with fewer years of education make significantly less positive forecast errors before age 55 (difference -0.116, $p < 0.001$, Table A3 g) and significantly less negative forecast errors after age 55 (difference 0.166, $p < 0.001$, Table A3 h). Notice, however, that smaller *average* forecast errors do not necessarily imply greater precision. On average, negative and positive errors cancel out. Average *absolute* forecast errors are significantly larger for the less educated (0.226, $p < 0.001$; Table A4, Fig. A4).

3. Discussion

These findings show a striking age-associated bias in life satisfaction forecasts. The young strongly overestimate their future life satisfaction while the elderly tend to underestimate it. The similarity of the observed patterns across regions and their stability over time indicate that the findings might be generalizable to other developed countries in other decades. Indeed, as Easterlin (22) has shown in a pioneering study, suggestive cross-sectional evidence on life ladder ranking expectations from the Cantril surveys (23) is in line with similar age biases in West-Germany and other developed countries around 1960 (see SI Fig. A6).

What are the causes underlying this age bias? One well known source of systematic forecast errors is that people underestimate how quickly they adapt to socio-economic changes such as changes in income (16, 17). Thus the observed age bias could be generated by the young expecting too much from anticipated income increases with the

elderly, who face decreasing incomes, committing the opposite error. In the data, forecast errors indeed roughly match with the average income profile which is increasing during young adulthood and decreasing after age 50 (Fig. A5). Further, the age bias is slightly more pronounced for the highly educated who have steeper income profiles than those with less education (Fig. A5).

However, the remarkable similarity across economically and culturally distinct regions and across gender suggests that some of the causes of the age bias go beyond age-related socio-economic characteristics. It is well established finding in psychological research that people tend to overestimate the likelihood of positive events and underestimate the likelihood of negative events (11-15, 24). For example, people expect to enjoy healthier lives than average or underestimate the probability of being divorced (11). Optimism bias has also been demonstrated in non-human animals (25). Neuroscientific research (13-15) has accumulated broad evidence that this bias is generated by selective processing of negative and positive information in the frontal brain which allows people to maintain biased expectations when confronted with discomfoting evidence. This might provide a biological explanation for why life satisfaction expectations are overoptimistic during much of adulthood and adjust only slowly over time. It does not explain, though, why expectations remain stable after midlife while actual life satisfaction increases, implying negative forecast errors during old age. However, little is known about optimism in old age and existing evidence is conflicting (26).

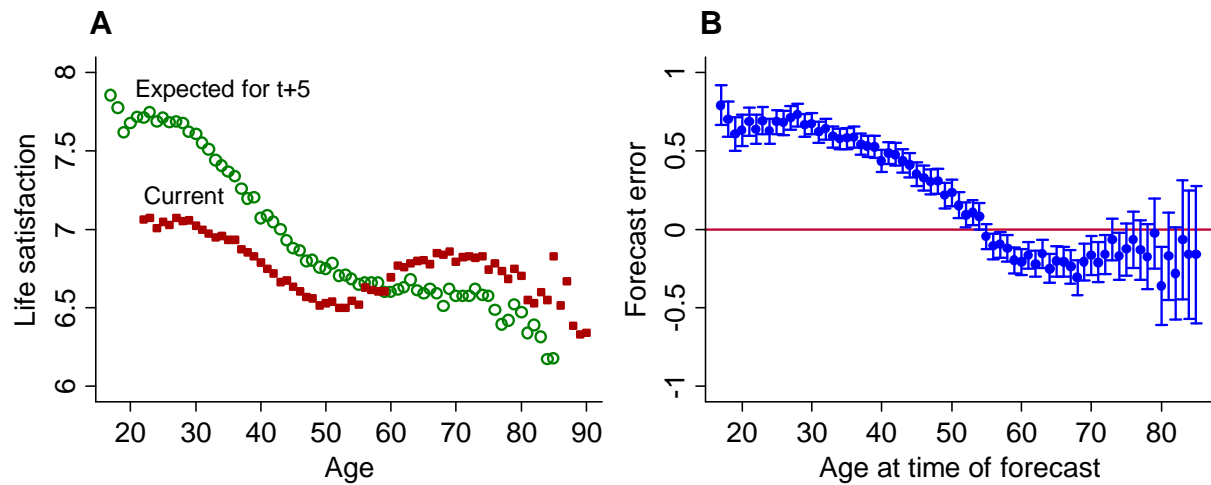
How do the age associated errors in expected life satisfaction documented here relate to the age U-shape in wellbeing? Some theories (8, 10) have assumed that the U-shape is driven by unmet expectations that negatively affect people's wellbeing in midlife but are abandoned and experienced with less regret during old age. The data reported here support this notion. Young adults have high aspirations that are subsequently unmet. And their life satisfaction decreases with age as long as expectations remain high and unmet. Aspirations are abandoned and expectations align with current wellbeing in the late 50s. This is the age when wellbeing starts to rise again. Further, given the disappointed expectations accumulated until that age, it is possible that wellbeing increases if the elderly learn to feel less regret (10). Following this interpretation of the U-shape in wellbeing, the observed negative forecast errors during old age might indicate that people do not

anticipate the wellbeing enhancing effects of abandoning high aspirations and experiencing less regret.

Disseminating the knowledge of age associated forecast errors in life satisfaction could help people adjust their expectations, optimize important decisions in their life and suffer less when aspirations are not met. This might weaken the midlife drop in life satisfaction.

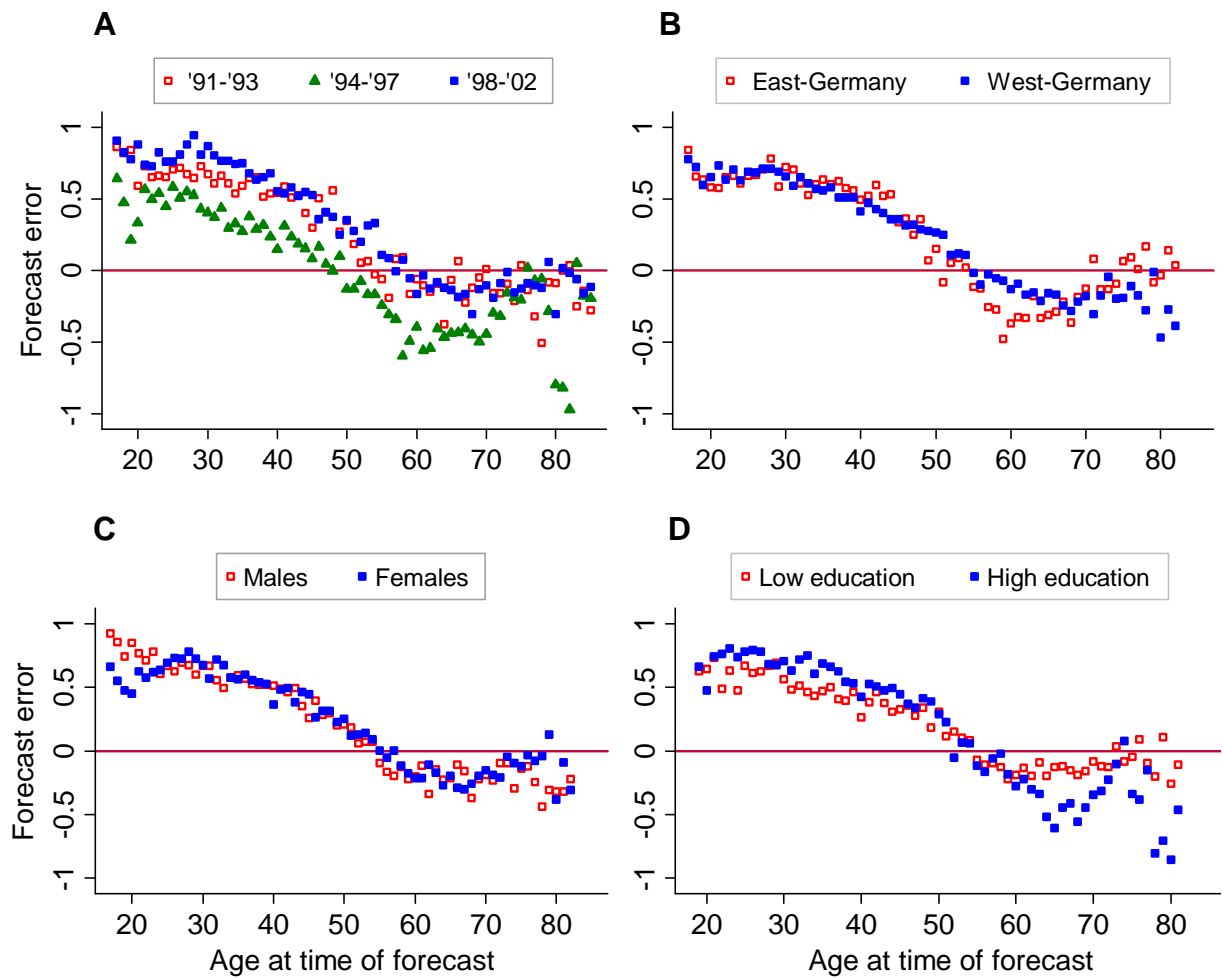
4. Figures and Tables

Figure 1: Expected life satisfaction, current life satisfaction and life satisfaction forecast errors over age



Notes: Expected life satisfaction, current life satisfaction and life satisfaction forecast errors are plotted over age. **(A)** (o) Expectations about life satisfaction in five years averaged over age, ranging from age 17 to 85. Sample size is 132,609. (■) The same sample's average current life satisfaction at ages 22 to 90. Current and expected life satisfaction are coded for each individual from a scale of 0 (completely dissatisfied) to 10 (completely satisfied). **(B)** Individual forecast errors averaged over age at time of the forecast (●) with 95% confidence intervals (I), for the same sample as in (A). Individual forecast errors equal an individual's expected life satisfaction in five years minus the same person's current life satisfaction five years ahead. Numerical values corresponding to both figures are reported in Table A3.

Figure 2: Life satisfaction forecast errors over age, by time periods, regions, gender and education.



Notes: Life satisfaction forecast errors are plotted over age at the time of the forecast and (A) time periods, (B) regions, (C) gender, (D) education. Low education refers to less than 11 years of schooling and high education to more than 12.5 years. To keep figures reasonably scaled, ages above 82 are omitted in (A)-(C) and ages below 19 and above 81 in (D). Numerical values corresponding to these figures are reported in SI Tables S6 and S7.

Table 1: Regressions of forecast errors on age polynomials

Dependent variable: Average forecast errors over age	Sample period			
	Overall 1991-2002 (1)	1991- 1993 (2)	1994- 1997 (3)	1998- 2002 (4)
Age	0.110 (0.010)	0.087 (0.019)		
Age ² /10	-0.029 (0.002)	-0.024 (0.004)		
Age ³ /1000	0.020 (0.002)	0.016 (0.002)		
Forecast errors predicted by '91-'93 estimates (col. 2)			1.057 (0.045)	1.120 (0.025)
Constant	-0.528 (0.139)	-0.219 (0.261)	-0.296 (0.021)	0.035 (0.012)
Adj. R ²	0.972	0.900	0.891	0.967
N	69	69	69	69

Notes: OLS regressions of average forecast errors over age on third order age polynomials (col. 1 and 2) and on predicted '91-'97 forecast errors (col. 3 and 4) yield a high R². Regressions are weighted by the number of observations per year of age. Standard errors in parenthesis. Regressions using the micro data are reported in Table A2.

5. Appendix

A1: Materials and Methods

A2: Figures A1-A6

A3: Tables A1-A8

A1. Materials and Methods

Data. The German Socio-Economic Panel (SOEP) is a survey in Germany that was established in 1984 by the German Institute for Economic Research, DIW Berlin. For a detailed description of the SOEP see Wagner et al. (27). I use 17 waves of the SOEP, 1991-2007, which include both East and West-Germany. I restrict the sample to respondents between age 17 and 85 with non-missing demographic information who report expected life satisfaction in a given year and for whom a report of current life satisfaction exists five years later. Thus I do not include individuals who remain in the panel for less than five years or enter the panel later than 2002. This results in an overall sample of 132,609 observations. Table A1 shows descriptive statistics for the variable that are used. 48% of the sample is male, 28% lives in East Germany, 46% have low education, 31% high education and the average age is 44.4.

Measure. The exact wording of the life satisfaction questions in German (for the official translation see the main text) is:

Antworten Sie bitte wieder anhand der folgenden Skala, bei der '0' ganz und gar unzufrieden, '10' ganz und gar zufrieden bedeutet:

- Wie zufrieden sind Sie gegenwärtig, alles in allem, mit Ihrem Leben? [1]

- Und was glauben Sie, wie wird es wohl in fünf Jahren sein? [2]

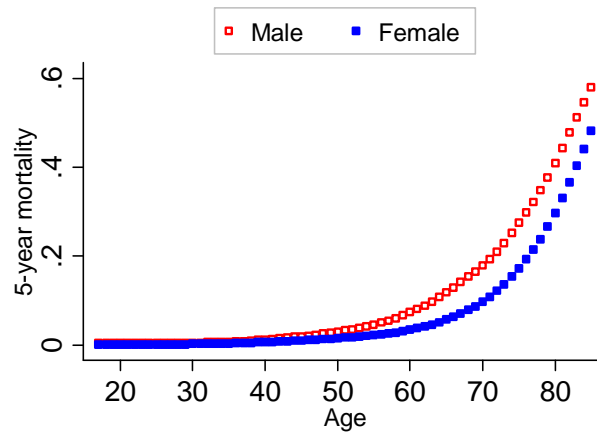
Question [1] is identical or similar to life satisfaction question in other widely-used surveys, such as British Household Panel Survey, the Eurobarometer, the World Values Survey. Individual-specific forecast errors are constructed as the difference of an

individual's answer to question [2] in a given year minus the same individual's answer to question [1] five years later. Kahneman et al. (28) have pointed out that the way in which life satisfaction is elicited in surveys might induce people to give too much weight to material aspects of their life reported beforehand in the same questionnaire. Such 'focusing illusion' might also matter for expected life satisfaction. For example, individuals with increasing income profiles might report higher life satisfaction expectations if the survey induced them to focus on their income. However, forecast errors are constructed as the difference of two life satisfaction measures, so that any common effect on the level of these measures is cancelled out.

Methods. A nonparametric approach is employed to analyze age patterns in life satisfaction forecast errors in a flexible and transparent way. Life satisfaction measures and forecast errors are averaged and plotted over age. Numerical values are tabulated in Tables S4 to S8. To summarize the age patterns in forecast errors numerically I fit third order age polynomials over the average forecast errors weighted by the size of the age cells. Regression results for individual instead of averaged forecast errors are reported in Table A2. The interaction of the age effects with time, region, gender and education is assessed by collapsing the data separately for each subgroup. Relevant subgroup differences in mean forecast errors are tested for significance by equality of means t-tests. Results are reported in Tables S3 and S4.

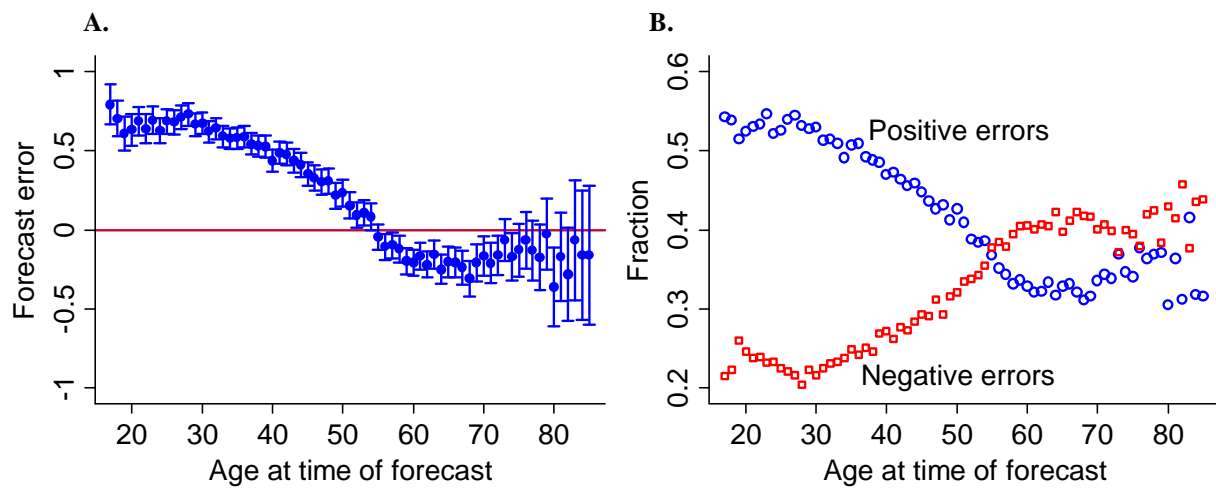
A2. Appendix Figures

Fig. A1: 5-year mortality rates over age by gender, Germany 1998/2000



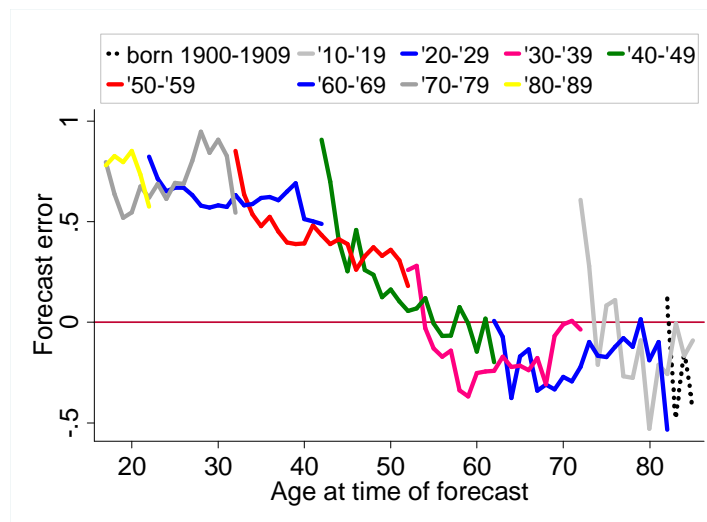
Notes: 5-year mortality rates are derived from life tables for Germany 1998/2000. Source: *Periodensterbetafeln für Deutschland - 1871/81 - 2008/10*, p. 271-274, downloadable at <https://www.destatis.de/DE/Publikationen/Thematisch/Bevoelkerung/Bevoelkerungsbewegung/Periodensterbetafeln.html>.

Fig. A2: (A) Forecast errors and (B) binary indicators of positive and negative forecast errors over age.



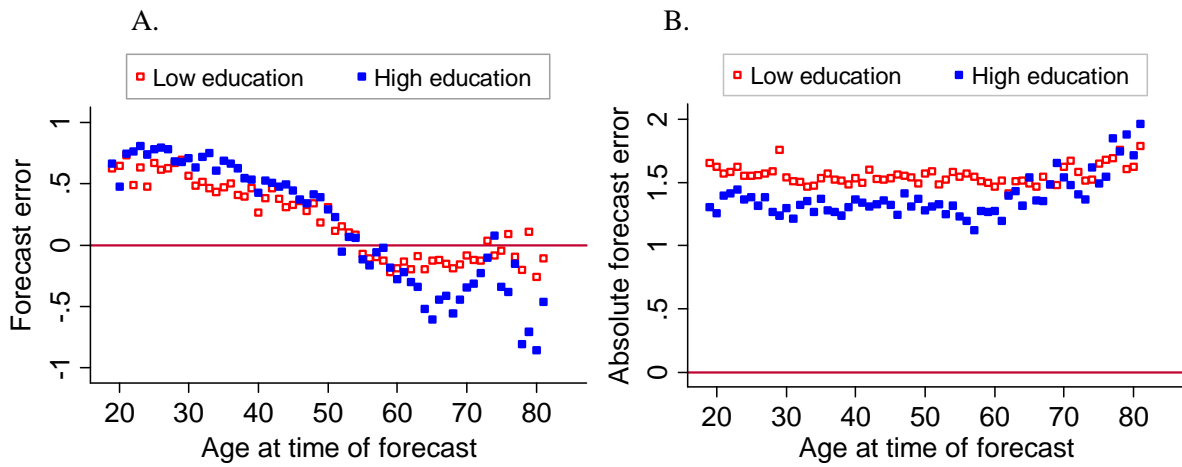
Notes: (A) Average forecast errors over age along with 95% confidence intervals. (B) Fractions of people committing positive and negative errors over age. Forecast errors equal expected life satisfaction minus realized life satisfaction in $t+5$. Numerical values underlying these figures are reported in Table A5 and S8.

Fig. A3: Forecast errors collapsed by age and birth cohort.



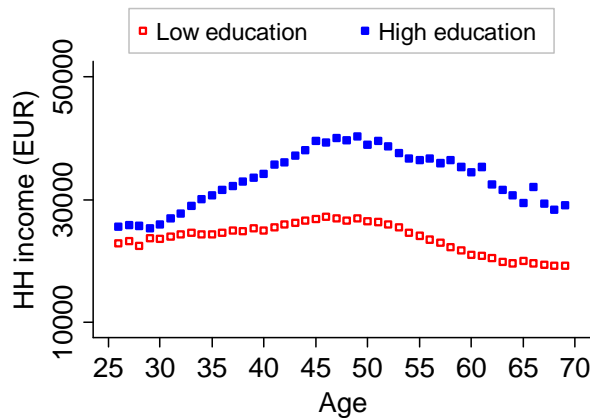
Notes: Average forecast errors over age plotted separately by 10-year birth cohorts. Individual forecast errors equal an individual's expected life satisfaction minus the same individual's realized life satisfaction five years later.

Fig. A4: (A) Forecast errors and (B) absolute forecast errors over age by education.



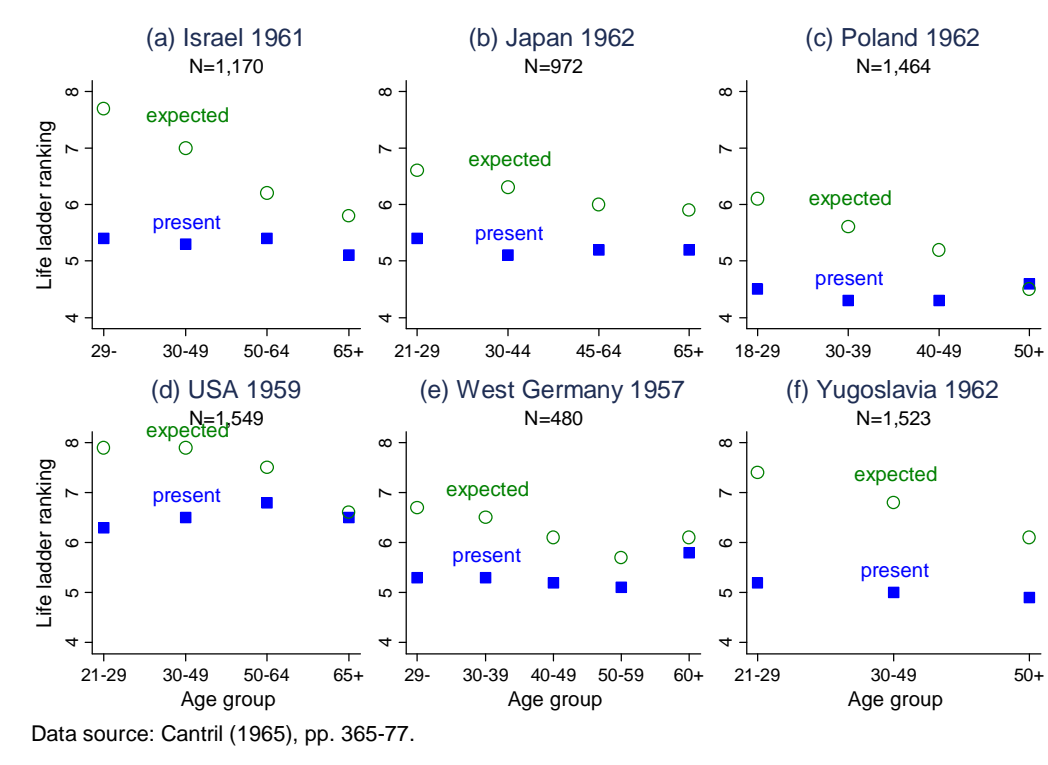
Notes: (A) Average forecast errors over age by education (B) Average *absolute* forecast errors over age by education. Forecast errors equal expected life satisfaction minus realized life satisfaction in $t+5$. Low education refers to less than 11 years of schooling and high education to more than 12.5 years. Numerical values underlying these figures are reported in table S7 and S8.

Fig. A5: Annual household income over age (25 to 70) by education



Notes: Average annual household income in nominal Euros over age by education. Low education refers to less than 11 years of schooling and high education to more than 12.5 years.

Fig. A6: Cantril data on present and expected life ladder rankings in six developed countries around 1960.



Notes: Average expected and present life ladder rankings by age groups in six developed countries are suggestive of a strongly positive expectation bias in young adulthood which decreases with age. There is little evidence of an age U-shape in life ladder rankings and of negative forecast errors in old age. This could be due to (i) the particular wellbeing measure used, (ii) time effects common to these countries around 1960 or (iii) the small sample size which might hide minor patterns. Notice that the data come from a single cross-section so that these pattern are not definitive evidence of about actual forecast errors. The numbers underlying these figures are taken from Cantril (1965), pp. 365-377.

For a further description and an insightful interpretation of these data see **Easterlin (23)**. Easterlin (23) interprets the gap between expected and present life ladder ranking with misprediction of hedonic adaptation to income. People do not foresee that their aspirations increase over age along with their incomes so that they expect to have higher rankings in the future while actual life ladder rankings remain constant.

The exact wording of the life ladder ranking question is:

"Please imagine a ladder with steps numbered from zero 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? (ladder-present)

- On which step do you think you will stand about five years from now? (ladder-expected) "

Tables S1-S8

A3. Appendix Tables

Table A1: Descriptive statistics

Variable	Mean	Std dev	Minimum	Maximum
Age	44.44	15.66	17	85
Male	0.48	0.50	0	1
East Germany	0.28	0.45	0	1
Low education	0.46	0.50	0	1
High education	0.31	0.46	0	1
Expected life satisfaction in t+5	7.07	1.87	0	10
Current life satisfaction in t+5	6.77	1.79	0	10
Forecast error	0.31	2.02	-10	10
Number of observations			132,609	

Notes: Low education refers to less than 11 years of schooling and high education to more than 12.5 years. The forecast error equals an individual's expected life satisfaction for t+5 minus the same individual's actual current life satisfaction in t+5.

Table A2: Regressions of individual forecast errors on age polynomials and predicted forecast errors (Table 1 estimated using micro data).

Dependent variable: Forecast errors	Sample period			
	Overall 1991-2002 (1)	1991-1993 (2)	1994-1997 (3)	1998-2002 (4)
Age	0.110 (0.008)	0.082 (0.017)		
Age ² /10	-0.029 (0.002)	-0.023 (0.004)		
Age ³ /1000	0.020 (0.001)	0.016 (0.003)		
Forecast errors predicted by '91-'93 estimates (column 2)			1.059 (0.032)	1.121 (0.023)
Constant	-0.528 (0.110)	-0.133 (0.228)	-0.294 (0.016)	0.038 (0.011)
Adj. R ²	0.028	0.023	0.028	0.034
N	132,609	29,309	38,347	64,953

Notes: OLS regressions of individual forecast errors on third order age polynomials (col. 1 and 2) and on predicted '91-'97 forecast errors (col. 3 and 4). Standard errors in parenthesis. Regressions using the data aggregated by age are reported in Table A2.

Table A3: T-tests for equality of mean forecast errors across subsamples.

Sample	Mean forecast error (1)	Std Err of the mean (2)	Difference means (i)-(ii) (3)	t-stat of difference (4)	p-value (5)
<u>a. Period 1 vs. 2</u>					
(i) 1991-1993	0.388	0.0122	0.287	17.955	<0.001
(ii) 1994-1997	0.101	0.0103			
<u>b. Period 3 vs. 2</u>					
(i) 1998-2002	0.395	0.0077	0.294	22.795	<0.001
(ii) 1994-1997	0.101	0.0103			
<u>c. Region, age < 55</u>					
(i) East	0.493	0.0127	-0.010	-0.656	0.512
(ii) West	0.502	0.0074			
<u>d. Region, age > 55</u>					
(i) East	-0.239	0.0203	-0.088	-3.638	<0.001
(ii) West	-0.151	0.0130			
<u>e. Gender, age < 55</u>					
(i) Male	0.498	0.0092	-0.004	-0.323	0.746
(ii) Female	0.502	0.0089			
<u>f. Gender, age > 55</u>					
(i) Male	-0.201	0.0158	-0.044	-2.018	0.044
(ii) Female	-0.156	0.0151			
<u>g. Education, age < 55</u>					
(i) Low education	0.442	0.0107	-0.116	-7.394	<0.001
(ii) High education	0.558	0.0114			
<u>h. Education, age > 55</u>					
(i) Low education	-0.127	0.0143	0.166	5.631	<0.001
(ii) High education	-0.293	0.0257			

Notes: t-stat for two-sample t test with unequal variances. East and West refer to East-Germany and West-Germany. Low education refers to less than 11 years of schooling and high education to more than 12.5 years.

Table A4: T-tests for equality of mean *absolute* forecast errors, low vs. high education

Sample	Mean <i>absolute</i> forecast error (1)	Std Err of the mean (2)	Difference means (i)-(ii) (3)	t-stat of difference (4)	p-value (4)
<u>A. Education, all</u>					
<u>ages</u>					
(i) Low education	1.552	0.0059	0.226	23.527	<0.001
(ii) High education	1.326	0.0076			

Notes: t-stat for two-sample t test with unequal variances. Low education refers to less than 11 years of schooling and high education to more than 12.5 years.

Table A5. Means of expected and current life satisfaction and forecast errors over age with standard errors (numerical values underlying Fig. 1)

	Expected life satisfaction for t+5		Current life satisfaction		Forecast error (=Expected-Current[t+5])		
	Mean	SE(mean)	Mean	SE(mean)	Mean	SE(mean)	Mean/Current[t+5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
age=17	7.854	0.050	-	-	0.792	0.065	0.112
age=18	7.777	0.045	-	-	0.702	0.058	0.099
age=19	7.616	0.044	-	-	0.608	0.055	0.087
age=20	7.677	0.041	-	-	0.630	0.051	0.089
age=21	7.715	0.039	-	-	0.685	0.047	0.098
age=22	7.711	0.037	7.062	0.054	0.638	0.047	0.090
age=23	7.745	0.034	7.075	0.045	0.693	0.044	0.098
age=24	7.684	0.034	7.008	0.043	0.625	0.041	0.089
age=25	7.709	0.033	7.047	0.041	0.684	0.040	0.097
age=26	7.679	0.032	7.029	0.039	0.680	0.039	0.097
age=27	7.685	0.031	7.073	0.037	0.711	0.038	0.102
age=28	7.676	0.030	7.052	0.035	0.728	0.036	0.105
age=29	7.623	0.031	7.059	0.035	0.665	0.037	0.096
age=30	7.604	0.029	7.025	0.034	0.673	0.035	0.097
age=31	7.552	0.029	7.000	0.033	0.620	0.034	0.089
age=32	7.511	0.030	6.974	0.032	0.640	0.034	0.093
age=33	7.440	0.031	6.948	0.031	0.589	0.034	0.086
age=34	7.406	0.030	6.957	0.031	0.577	0.033	0.085
age=35	7.368	0.031	6.930	0.032	0.579	0.035	0.085
age=36	7.338	0.030	6.932	0.030	0.587	0.034	0.087
age=37	7.259	0.031	6.871	0.031	0.542	0.034	0.081
age=38	7.196	0.032	6.851	0.031	0.530	0.034	0.080
age=39	7.200	0.032	6.829	0.031	0.524	0.035	0.079
age=40	7.072	0.033	6.789	0.031	0.437	0.036	0.066
age=41	7.088	0.033	6.750	0.031	0.486	0.036	0.074
age=42	7.046	0.034	6.717	0.031	0.479	0.038	0.073
age=43	6.996	0.035	6.666	0.032	0.436	0.037	0.066
age=44	6.927	0.036	6.676	0.033	0.411	0.039	0.063
age=45	6.880	0.037	6.634	0.033	0.352	0.039	0.054
age=46	6.865	0.038	6.601	0.034	0.328	0.040	0.050
age=47	6.800	0.039	6.567	0.035	0.301	0.041	0.046
age=48	6.804	0.039	6.560	0.035	0.307	0.041	0.047
age=49	6.760	0.040	6.516	0.036	0.216	0.042	0.033
age=50	6.750	0.040	6.528	0.037	0.233	0.043	0.036
age=51	6.782	0.040	6.537	0.038	0.153	0.042	0.023
age=52	6.704	0.040	6.499	0.039	0.090	0.040	0.014
age=53	6.709	0.040	6.498	0.038	0.107	0.041	0.016
age=54	6.686	0.041	6.544	0.038	0.082	0.043	0.012
age=55	6.648	0.041	6.517	0.038	-0.046	0.041	-0.007
age=56	6.658	0.041	6.629	0.037	-0.108	0.043	-0.016
age=57	6.658	0.040	6.614	0.038	-0.099	0.042	-0.015
age=58	6.659	0.041	6.602	0.038	-0.123	0.042	-0.018
age=59	6.598	0.042	6.604	0.038	-0.199	0.042	-0.029
age=60	6.597	0.042	6.694	0.037	-0.208	0.041	-0.031
age=61	6.614	0.042	6.767	0.037	-0.167	0.043	-0.025
age=62	6.631	0.043	6.757	0.036	-0.220	0.042	-0.032
age=63	6.679	0.045	6.781	0.037	-0.159	0.046	-0.023

age=64	6.610	0.046	6.797	0.037	-0.249	0.047	-0.036
age=65	6.591	0.049	6.805	0.037	-0.204	0.050	-0.030
age=66	6.617	0.049	6.781	0.038	-0.206	0.049	-0.030
age=67	6.589	0.051	6.850	0.038	-0.239	0.055	-0.035
age=68	6.508	0.053	6.837	0.042	-0.308	0.057	-0.045
age=69	6.619	0.057	6.860	0.042	-0.209	0.060	-0.031
age=70	6.575	0.059	6.795	0.045	-0.167	0.063	-0.025
age=71	6.572	0.061	6.823	0.045	-0.209	0.066	-0.031
age=72	6.574	0.063	6.827	0.049	-0.161	0.064	-0.024
age=73	6.617	0.069	6.816	0.052	-0.065	0.068	-0.010
age=74	6.580	0.070	6.828	0.055	-0.171	0.076	-0.025
age=75	6.572	0.077	6.742	0.058	-0.129	0.084	-0.019
age=76	6.484	0.081	6.781	0.060	-0.067	0.092	-0.010
age=77	6.394	0.087	6.736	0.061	-0.133	0.097	-0.020
age=78	6.420	0.098	6.682	0.066	-0.176	0.106	-0.027
age=79	6.521	0.103	6.751	0.070	-0.027	0.115	-0.004
age=80	6.467	0.118	6.702	0.076	-0.361	0.127	-0.053
age=81	6.340	0.126	6.550	0.082	-0.172	0.142	-0.026
age=82	6.389	0.146	6.527	0.090	-0.282	0.150	-0.042
age=83	6.315	0.172	6.597	0.095	-0.067	0.193	-0.011
age=84	6.169	0.189	6.548	0.106	-0.162	0.208	-0.026
age=85	6.177	0.186	6.828	0.106	-0.162	0.223	-0.025
age=86	-	-	6.512	0.129	-	-	-
age=87	-	-	6.671	0.141	-	-	-
age=88	-	-	6.382	0.148	-	-	-
age=89	-	-	6.331	0.180	-	-	-
age=90	-	-	6.338	0.199	-	-	-

overall N	132,609		132,609			132,609	
-----------	---------	--	---------	--	--	---------	--

Table A6. Means of forecast errors over age and time/region with standard errors
(numerical values underlying Fig. 2, panel A and B)

Sample	Forecast error									
	1991-1993		1994-1997		1998-2002		East-Germany		West-Germany	
	Mean	SE(mean)	Mean	SE(mean)	Mean	SE(mean)	Mean	SE(mean)	Mean	SE(mean)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
age=17	0.865	0.113	0.643	0.098	0.906	0.131	0.839	0.136	0.774	0.073
age=18	0.821	0.104	0.473	0.092	0.826	0.102	0.654	0.109	0.722	0.068
age=19	0.842	0.106	0.212	0.092	0.775	0.086	0.634	0.105	0.598	0.064
age=20	0.593	0.091	0.331	0.093	0.882	0.081	0.579	0.103	0.651	0.059
age=21	0.726	0.088	0.567	0.084	0.742	0.073	0.574	0.088	0.731	0.055
age=22	0.652	0.081	0.495	0.091	0.730	0.072	0.649	0.089	0.634	0.055
age=23	0.665	0.081	0.541	0.079	0.824	0.069	0.662	0.078	0.704	0.052
age=24	0.651	0.076	0.447	0.072	0.760	0.065	0.608	0.082	0.631	0.047
age=25	0.705	0.074	0.583	0.067	0.763	0.066	0.661	0.079	0.691	0.046
age=26	0.720	0.073	0.507	0.066	0.810	0.064	0.667	0.080	0.684	0.045
age=27	0.676	0.076	0.550	0.062	0.881	0.062	0.705	0.080	0.713	0.043
age=28	0.647	0.075	0.526	0.063	0.947	0.053	0.782	0.075	0.713	0.041
age=29	0.731	0.081	0.430	0.064	0.808	0.053	0.588	0.078	0.688	0.042
age=30	0.674	0.076	0.403	0.059	0.871	0.052	0.723	0.075	0.657	0.039
age=31	0.610	0.077	0.373	0.059	0.805	0.049	0.707	0.073	0.592	0.039
age=32	0.662	0.078	0.436	0.062	0.766	0.048	0.607	0.073	0.651	0.039
age=33	0.608	0.076	0.295	0.062	0.768	0.049	0.528	0.074	0.609	0.039
age=34	0.536	0.073	0.328	0.060	0.744	0.047	0.603	0.067	0.569	0.038
age=35	0.592	0.078	0.274	0.066	0.749	0.048	0.634	0.068	0.558	0.041
age=36	0.648	0.078	0.375	0.065	0.680	0.046	0.605	0.066	0.581	0.040
age=37	0.651	0.081	0.291	0.065	0.635	0.045	0.621	0.066	0.511	0.040
age=38	0.517	0.082	0.318	0.063	0.650	0.047	0.575	0.066	0.512	0.040
age=39	0.536	0.083	0.236	0.066	0.682	0.048	0.557	0.069	0.511	0.041
age=40	0.545	0.086	0.148	0.067	0.557	0.050	0.494	0.068	0.412	0.043
age=41	0.587	0.083	0.309	0.072	0.537	0.048	0.522	0.068	0.470	0.043
age=42	0.509	0.080	0.237	0.077	0.583	0.051	0.599	0.070	0.426	0.044
age=43	0.526	0.079	0.187	0.075	0.521	0.051	0.522	0.070	0.399	0.044
age=44	0.405	0.085	0.154	0.077	0.549	0.054	0.531	0.075	0.360	0.046
age=45	0.298	0.099	0.080	0.070	0.526	0.052	0.336	0.074	0.359	0.046
age=46	0.508	0.098	0.167	0.073	0.359	0.055	0.360	0.080	0.315	0.047
age=47	0.407	0.097	0.046	0.078	0.408	0.055	0.251	0.078	0.321	0.048
age=48	0.562	0.095	-0.002	0.080	0.373	0.055	0.359	0.078	0.285	0.048
age=49	0.272	0.089	0.097	0.087	0.248	0.057	0.067	0.084	0.275	0.048
age=50	0.350	0.091	-0.130	0.088	0.355	0.057	0.150	0.079	0.268	0.050
age=51	0.183	0.085	-0.129	0.088	0.276	0.056	-0.083	0.082	0.248	0.048
age=52	0.052	0.087	-0.075	0.080	0.199	0.054	0.051	0.084	0.106	0.046
age=53	0.065	0.083	-0.166	0.076	0.313	0.059	0.084	0.084	0.117	0.046
age=54	-0.030	0.088	-0.165	0.075	0.330	0.063	0.019	0.080	0.107	0.050
age=55	-0.059	0.087	-0.242	0.076	0.109	0.057	-0.115	0.079	-0.016	0.048
age=56	-0.188	0.093	-0.307	0.076	0.086	0.061	-0.127	0.081	-0.100	0.050
age=57	0.083	0.100	-0.339	0.072	-0.006	0.060	-0.256	0.074	-0.028	0.051
age=58	0.089	0.114	-0.596	0.078	0.077	0.054	-0.273	0.077	-0.054	0.051
age=59	-0.162	0.108	-0.495	0.082	-0.057	0.054	-0.481	0.080	-0.071	0.049
age=60	-0.058	0.109	-0.398	0.085	-0.166	0.052	-0.372	0.075	-0.133	0.050
age=61	-0.105	0.115	-0.556	0.092	-0.033	0.053	-0.326	0.074	-0.094	0.053
age=62	-0.148	0.100	-0.540	0.095	-0.123	0.053	-0.333	0.073	-0.167	0.052
age=63	-0.093	0.107	-0.405	0.094	-0.081	0.060	-0.178	0.081	-0.151	0.056

age=64	-0.377	0.111	-0.468	0.092	-0.119	0.061	-0.332	0.084	-0.212	0.056
age=65	-0.066	0.117	-0.437	0.095	-0.138	0.068	-0.310	0.091	-0.158	0.060
age=66	0.064	0.113	-0.432	0.099	-0.183	0.064	-0.288	0.092	-0.171	0.057
age=67	-0.223	0.138	-0.405	0.102	-0.162	0.073	-0.220	0.105	-0.246	0.064
age=68	-0.119	0.139	-0.452	0.109	-0.307	0.075	-0.367	0.106	-0.284	0.067
age=69	-0.051	0.149	-0.498	0.110	-0.129	0.080	-0.187	0.125	-0.217	0.068
age=70	0.013	0.147	-0.446	0.122	-0.104	0.084	-0.126	0.120	-0.181	0.074
age=71	-0.156	0.156	-0.299	0.123	-0.188	0.089	0.082	0.128	-0.307	0.076
age=72	-0.158	0.174	-0.317	0.127	-0.086	0.080	-0.129	0.132	-0.172	0.073
age=73	-0.092	0.208	-0.156	0.129	-0.012	0.085	-0.133	0.128	-0.042	0.080
age=74	-0.211	0.259	-0.187	0.145	-0.155	0.093	-0.095	0.140	-0.196	0.090
age=75	0.038	0.236	-0.205	0.173	-0.126	0.105	0.065	0.169	-0.190	0.097
age=76	-0.135	0.248	0.020	0.198	-0.085	0.113	0.089	0.189	-0.110	0.105
age=77	-0.322	0.301	-0.071	0.213	-0.105	0.114	0.008	0.162	-0.176	0.117
age=78	-0.506	0.242	-0.060	0.277	-0.122	0.128	0.170	0.213	-0.280	0.121
age=79	-0.083	0.250	-0.284	0.276	0.061	0.145	-0.084	0.256	-0.010	0.128
age=80	-0.088	0.277	-0.797	0.284	-0.303	0.165	-0.036	0.252	-0.469	0.147
age=81	0.000	0.305	-0.818	0.304	0.018	0.186	0.139	0.287	-0.271	0.163
age=82	0.036	0.257	-0.971	0.290	-0.018	0.224	0.034	0.266	-0.386	0.179
age=83	-0.250	0.437	0.052	0.329	-0.063	0.286	0.171	0.483	-0.139	0.206
age=84	-0.143	0.597	-0.176	0.347	-0.160	0.282	-0.441	0.412	-0.083	0.240
age=85	-0.278	0.718	-0.195	0.344	-0.113	0.312	-0.875	0.460	0.000	0.252
overall N	29,309	38,347	64,953	37,070	95,539					

Table A7. Means of forecast errors over age and gender/education with standard errors (numerical values underlying Fig. 2, panel C and D)

Sample	Forecast error							
	Male		Female		Low education		High education	
	Mean	SE(mean)	Mean	SE(mean)	Mean	SE(mean)	Mean	SE(mean)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
age=17	0.927	0.091	0.663	0.092	0.804	0.065		
age=18	0.855	0.080	0.553	0.082	0.715	0.059	0.500	0.866
age=19	0.746	0.078	0.477	0.077	0.625	0.059	0.667	0.201
age=20	0.852	0.080	0.450	0.065	0.646	0.064	0.477	0.111
age=21	0.770	0.073	0.627	0.061	0.730	0.068	0.745	0.088
age=22	0.714	0.070	0.578	0.062	0.488	0.075	0.765	0.078
age=23	0.785	0.065	0.619	0.059	0.631	0.075	0.806	0.073
age=24	0.607	0.061	0.640	0.055	0.476	0.073	0.740	0.071
age=25	0.670	0.058	0.696	0.054	0.672	0.071	0.784	0.069
age=26	0.625	0.055	0.730	0.055	0.615	0.069	0.795	0.063
age=27	0.694	0.056	0.727	0.052	0.626	0.068	0.779	0.066
age=28	0.674	0.052	0.779	0.050	0.668	0.066	0.682	0.060
age=29	0.601	0.053	0.726	0.051	0.698	0.074	0.678	0.058
age=30	0.670	0.049	0.676	0.050	0.565	0.066	0.709	0.058
age=31	0.671	0.050	0.571	0.047	0.483	0.067	0.633	0.055
age=32	0.560	0.048	0.719	0.049	0.512	0.065	0.719	0.060
age=33	0.496	0.048	0.679	0.049	0.464	0.065	0.754	0.059
age=34	0.576	0.048	0.578	0.046	0.434	0.066	0.610	0.056
age=35	0.595	0.049	0.564	0.050	0.473	0.067	0.687	0.060
age=36	0.570	0.049	0.604	0.047	0.504	0.069	0.663	0.054
age=37	0.529	0.049	0.556	0.048	0.408	0.066	0.627	0.056
age=38	0.518	0.047	0.542	0.049	0.398	0.066	0.544	0.056
age=39	0.522	0.050	0.526	0.049	0.461	0.063	0.532	0.061
age=40	0.515	0.052	0.367	0.051	0.263	0.067	0.429	0.063
age=41	0.490	0.053	0.483	0.050	0.382	0.064	0.529	0.066
age=42	0.462	0.055	0.494	0.051	0.467	0.069	0.510	0.066
age=43	0.496	0.054	0.382	0.051	0.379	0.066	0.475	0.067
age=44	0.352	0.058	0.463	0.053	0.312	0.065	0.493	0.071
age=45	0.256	0.055	0.444	0.055	0.325	0.064	0.448	0.071
age=46	0.396	0.057	0.263	0.057	0.358	0.068	0.369	0.072
age=47	0.286	0.058	0.315	0.058	0.275	0.066	0.341	0.077
age=48	0.297	0.059	0.316	0.057	0.341	0.066	0.416	0.075
age=49	0.204	0.060	0.227	0.058	0.181	0.064	0.387	0.082
age=50	0.211	0.061	0.254	0.059	0.309	0.063	0.291	0.077
age=51	0.183	0.058	0.124	0.060	0.114	0.063	0.230	0.079
age=52	0.058	0.055	0.125	0.059	0.151	0.059	-0.051	0.083
age=53	0.075	0.057	0.140	0.059	0.106	0.059	0.066	0.084
age=54	0.073	0.061	0.090	0.060	0.087	0.061	0.060	0.086
age=55	-0.093	0.058	0.004	0.058	-0.069	0.058	-0.113	0.083
age=56	-0.162	0.059	-0.053	0.061	-0.107	0.060	-0.167	0.084
age=57	-0.198	0.057	0.005	0.062	-0.098	0.058	-0.059	0.079
age=58	-0.130	0.059	-0.116	0.061	-0.126	0.058	-0.022	0.094
age=59	-0.223	0.060	-0.175	0.059	-0.223	0.056	-0.183	0.089
age=60	-0.201	0.060	-0.216	0.057	-0.188	0.056	-0.274	0.092
age=61	-0.116	0.062	-0.215	0.061	-0.135	0.057	-0.221	0.091
age=62	-0.341	0.062	-0.107	0.057	-0.197	0.054	-0.300	0.103
age=63	-0.147	0.064	-0.169	0.066	-0.088	0.059	-0.341	0.119

age=64	-0.228	0.066	-0.268	0.066	-0.194	0.061	-0.520	0.104
age=65	-0.214	0.075	-0.195	0.067	-0.126	0.064	-0.606	0.132
age=66	-0.111	0.070	-0.290	0.068	-0.121	0.064	-0.445	0.116
age=67	-0.158	0.079	-0.304	0.075	-0.153	0.070	-0.416	0.134
age=68	-0.369	0.081	-0.259	0.079	-0.187	0.071	-0.554	0.145
age=69	-0.222	0.093	-0.198	0.078	-0.160	0.076	-0.444	0.156
age=70	-0.187	0.096	-0.151	0.083	-0.081	0.082	-0.348	0.158
age=71	-0.233	0.096	-0.192	0.090	-0.123	0.084	-0.313	0.151
age=72	-0.097	0.096	-0.206	0.086	-0.127	0.081	-0.227	0.168
age=73	-0.096	0.104	-0.045	0.090	0.037	0.087	-0.099	0.161
age=74	-0.292	0.122	-0.094	0.097	-0.082	0.093	0.076	0.219
age=75	-0.142	0.135	-0.122	0.108	-0.049	0.109	-0.337	0.218
age=76	-0.122	0.153	-0.036	0.115	0.088	0.114	-0.380	0.238
age=77	-0.249	0.138	-0.077	0.128	-0.095	0.119	-0.153	0.317
age=78	-0.436	0.173	-0.043	0.132	-0.204	0.129	-0.809	0.345
age=79	-0.308	0.193	0.125	0.142	0.110	0.129	-0.707	0.386
age=80	-0.320	0.178	-0.384	0.172	-0.259	0.155	-0.857	0.394
age=81	-0.320	0.200	-0.093	0.190	-0.111	0.167	-0.464	0.505
age=82	-0.222	0.267	-0.309	0.182	-0.311	0.187	-0.947	0.449
age=83	-0.385	0.417	0.063	0.212	0.137	0.238	-1.250	0.674
age=84	-0.705	0.367	0.055	0.249	0.218	0.271	-0.600	0.779
age=85	-0.444	0.379	-0.053	0.273	0.023	0.282	-0.636	0.717
overall N	63,108		69,501		60,865		30,044	

Table A8. Means of absolute and binary forecast errors over age with standard errors (Fig. A1 and S3)

	Absolute forecast errors				Binary indicator of positive errors		Binary indicator of negative errors	
	Low education		High education		Mean	SE(mean)	Mean	SE(mean)
	Mean	SE(mean)	Mean	SE(mean)				
	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)
age=17	1.593	0.048			0.542	0.016	0.215	0.013
age=18	1.625	0.042	1.500	0.289	0.539	0.014	0.223	0.011
age=19	1.655	0.042	1.307	0.153	0.514	0.013	0.260	0.011
age=20	1.623	0.045	1.253	0.082	0.524	0.013	0.246	0.011
age=21	1.573	0.048	1.397	0.066	0.530	0.012	0.238	0.010
age=22	1.583	0.052	1.415	0.058	0.533	0.012	0.239	0.010
age=23	1.624	0.053	1.441	0.054	0.546	0.011	0.232	0.009
age=24	1.552	0.051	1.368	0.054	0.521	0.011	0.233	0.009
age=25	1.551	0.051	1.383	0.052	0.525	0.010	0.225	0.009
age=26	1.560	0.048	1.317	0.048	0.539	0.010	0.221	0.008
age=27	1.571	0.049	1.383	0.051	0.544	0.010	0.216	0.008
age=28	1.589	0.046	1.271	0.046	0.531	0.009	0.204	0.008
age=29	1.756	0.053	1.238	0.044	0.527	0.009	0.223	0.008
age=30	1.540	0.047	1.296	0.045	0.529	0.009	0.216	0.008
age=31	1.510	0.047	1.213	0.041	0.513	0.009	0.225	0.008
age=32	1.503	0.045	1.321	0.047	0.515	0.009	0.231	0.008
age=33	1.469	0.046	1.352	0.046	0.509	0.009	0.233	0.008
age=34	1.477	0.047	1.267	0.042	0.492	0.009	0.238	0.008
age=35	1.536	0.047	1.372	0.045	0.507	0.009	0.249	0.008
age=36	1.568	0.048	1.282	0.040	0.509	0.009	0.242	0.008
age=37	1.521	0.046	1.271	0.042	0.492	0.009	0.250	0.008
age=38	1.515	0.045	1.237	0.042	0.489	0.009	0.246	0.008
age=39	1.488	0.043	1.302	0.045	0.485	0.009	0.268	0.008
age=40	1.535	0.045	1.362	0.043	0.469	0.009	0.272	0.008
age=41	1.498	0.045	1.340	0.050	0.472	0.009	0.262	0.008
age=42	1.603	0.048	1.312	0.050	0.463	0.009	0.277	0.008
age=43	1.531	0.046	1.326	0.048	0.455	0.009	0.273	0.008
age=44	1.521	0.045	1.361	0.052	0.459	0.010	0.284	0.009
age=45	1.536	0.044	1.320	0.052	0.448	0.010	0.293	0.009
age=46	1.567	0.048	1.243	0.054	0.436	0.010	0.291	0.009
age=47	1.555	0.045	1.412	0.054	0.427	0.010	0.312	0.009
age=48	1.543	0.046	1.312	0.054	0.431	0.010	0.293	0.009
age=49	1.492	0.044	1.373	0.060	0.413	0.010	0.315	0.010
age=50	1.571	0.042	1.283	0.053	0.427	0.010	0.321	0.010
age=51	1.590	0.043	1.311	0.056	0.409	0.010	0.335	0.010
age=52	1.488	0.041	1.329	0.059	0.387	0.010	0.338	0.010
age=53	1.522	0.039	1.250	0.062	0.383	0.010	0.343	0.010
age=54	1.586	0.042	1.319	0.060	0.385	0.010	0.355	0.010
age=55	1.549	0.039	1.233	0.059	0.368	0.010	0.377	0.010
age=56	1.574	0.040	1.195	0.061	0.352	0.010	0.385	0.010
age=57	1.547	0.039	1.125	0.057	0.344	0.010	0.379	0.010
age=58	1.510	0.040	1.276	0.070	0.331	0.010	0.395	0.010
age=59	1.498	0.039	1.266	0.063	0.337	0.010	0.405	0.010
age=60	1.468	0.038	1.274	0.067	0.329	0.010	0.405	0.010
age=61	1.516	0.039	1.193	0.067	0.321	0.010	0.401	0.010
age=62	1.416	0.038	1.393	0.072	0.322	0.010	0.407	0.011
age=63	1.513	0.040	1.431	0.087	0.334	0.011	0.404	0.011

age=64	1.519	0.042	1.315	0.075	0.317	0.011	0.422	0.012
age=65	1.495	0.044	1.538	0.097	0.329	0.012	0.398	0.012
age=66	1.470	0.043	1.360	0.080	0.332	0.012	0.412	0.012
age=67	1.545	0.048	1.354	0.099	0.320	0.012	0.422	0.013
age=68	1.489	0.049	1.487	0.106	0.310	0.013	0.417	0.014
age=69	1.483	0.053	1.657	0.099	0.316	0.013	0.416	0.014
age=70	1.627	0.056	1.540	0.105	0.336	0.014	0.401	0.014
age=71	1.674	0.056	1.482	0.100	0.344	0.014	0.406	0.015
age=72	1.582	0.053	1.404	0.120	0.339	0.015	0.399	0.015
age=73	1.514	0.059	1.366	0.108	0.368	0.016	0.372	0.016
age=74	1.523	0.064	1.619	0.150	0.347	0.017	0.400	0.018
age=75	1.647	0.076	1.495	0.158	0.341	0.018	0.395	0.018
age=76	1.681	0.076	1.544	0.167	0.377	0.020	0.380	0.020
age=77	1.689	0.080	1.847	0.205	0.363	0.020	0.419	0.021
age=78	1.757	0.082	1.745	0.259	0.368	0.023	0.425	0.023
age=79	1.608	0.087	1.878	0.271	0.371	0.024	0.383	0.024
age=80	1.627	0.113	1.714	0.300	0.305	0.025	0.429	0.027
age=81	1.789	0.109	1.964	0.347	0.364	0.028	0.414	0.029
age=82	1.739	0.129	1.579	0.336	0.312	0.030	0.457	0.033
age=83	1.932	0.157	2.125	0.507	0.416	0.037	0.376	0.036
age=84	2.020	0.181	1.667	0.659	0.318	0.038	0.435	0.040
age=85	1.908	0.193	1.909	0.436	0.315	0.041	0.438	0.044
overall N	60,865		30,044		132,609		132,609	

6. References

1. Oswald AJ, Wu S (2010) Objective confirmation of subjective measures of human well-being: Evidence from the U.S.A.. Science 327:576-579
2. Easterlin RA (2003) Explaining happiness. Proceedings of the National Academy of Sciences U.S.A. 100:11176-11183
3. Clark AE, Frijters P, Shield MA (2008) Relative income, happiness, and utility: An explanation for the Easterlin paradox and other puzzles. Journal of Economic Literature 46:95-144
4. Blanchflower DG, Oswald AJ (2008) Is well-being U-shaped over the life cycle? Social Science & Medicine 66:1733-1749
5. Stone AA, Schwartz JE, Broderick JE, Deaton A (2010) A snapshot of the age distribution of psychological well-being in the United States. Proceedings of the National Academy of Sciences U.S.A. 107:9985-9990 (2010)
6. Van Landeghem B (2012) A test for the convexity of human well-being over the life cycle: Longitudinal evidence from a 20-year panel. Journal of Economic Behavior & Organization 81:571-582
7. Weiss A, King KE, Inoue-Murayama M, Matsuzawa T, Oswald AJ (2012) Evidence for a midlife crisis in great apes consistent with the U-shape in human well-being. Proceedings of the National Academy of Sciences U.S.A. 109, 19949-19952:2012
8. Frey BS, Stutzer A (2002) *Happiness and Economics* (Princeton Univ. Press, Princeton)
9. Frijters P, Beaton T (2012) The mystery of the U-shaped relationship between happiness and age. Journal of Economic Behavior & Organization 82:525–542.
10. Brassens S, Gamer M, Peters J, Gluth S, Büchel C (2012) Don't look back in anger! Responsiveness to missed chances in successful and unsuccessful aging. Science 336:612-614
11. Weinstein ND (1980) Unrealistic optimism about future life events. Journal of Personality and Social Psychology 39:806-820
12. Puri M, Robinson DT (2007) Optimism and economic choice. Journal of Financial Economics 86:71-99
13. Sharot T, Riccardi AM, Raio CM, Phelps EA (2007) Neural mechanisms mediating optimism bias. Nature 450:102-105

14. Sharot T, Korn CW, Dolan RJ (2011) How unrealistic optimism is maintained in the face of reality. Nature Neuroscience 14:1475-1479
15. Sharot T, Kanai R, Marston D, Korn CW, Rees G, Dolan RJ (2012) Selectively altering belief formation in the human brain. Proceedings of the National Academy of Sciences U.S.A. 109:17058-17062
16. Loewenstein GF, Schkade D (1999) in *Well-Being: The Foundations of Hedonic Psychology*, Diener E, Schwartz N, Kahneman D (eds), Russell Sage Foundation: New York.
17. Kahneman D, Thaler R (2006) Anomalies: Utility maximization and experienced utility. Journal of Economic Perspectives 20:221-234
18. Kahneman D, Deaton A (2010) High income improves evaluation of life but not emotional well-being. Proceedings of the National Academy of Sciences U.S.A. 107:16489-16493
19. Benjamin DJ, Heffetz O, Kimball MS, Rees-Jones A (2012) What Do You Think Would Make You Happier? What Do You Think You Would Choose? American Economic Review 102:2083-2110
20. Ferrer-i-Carbonell A, Frijters P (2004) How important is methodology for the estimates of the determinants of happiness? Economic Journal 114:641-659
21. Alesina A, Fuchs-Schündeln N (2007) Good bye Lenin (or not?): The effect of Communism on people's preferences. American Economic Review 97:1507-1528
22. Easterlin RA (2001) Income and happiness: Towards a unified theory. Economic Journal 111:465-484
23. Cantril H (1965) *The pattern of human concerns*. (New Brunswick, NJ, Rutgers Univ. Press)
24. Mayraz, G (2011) Wishful Thinking. Discussion Paper No. 1092, Centre for Economic Performance, London School of Economics
25. Matheson SM, Asher L, Bateson M, (2008) Larger, enriched cages are associated with 'optimistic' response biases in captive European starlings (*Sturnus vulgaris*). Applied Animal Behaviour Science 109:374-383
26. Isaacowitz DM (2005) Correlates of well-being in adulthood and old age: A tale of two optimisms, Journal of Research in Personality 39:224-244

27. Wagner G, Frick J, Schupp J (2007) The German Socio-Economic Panel study (SOEP)-evolution, scope and enhancements. Schmollers Jahrbuch 127:139-169
28. Kahneman D, Krueger AB, Schkade D, Schwarz N, Stone AA (2006) Would You Be Happier If You Were Richer? A Focusing Illusion, Science 312:1908-1910