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Early-Life Correlates of Later-Life Well-Being: Evidence from the Wisconsin Longitudinal Study

Andrew E. Clark
Tom Lee

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Abstract
We here use data from the Wisconsin Longitudinal Study (WLS) to provide one of the first analyses of the distal (early-life) and proximal (later-life) correlates of older-life subjective well-being. Unusually, we have two distinct measures of the latter: happiness and eudaimonia. Even after controlling for proximal covariates, outcomes at age 18 (IQ score, parental income and parental education) remain good predictors of well-being over 50 years later. In terms of the proximal covariates, mental health and social participation are the strongest predictors of both measures of well-being in older age. However, there are notable differences in the other correlates of happiness and eudaimonia. As such, well-being policy will depend to an extent on which measure is preferred.

Keywords: life-course, well-being, eudaimonia, health, happiness
JEL: I31; I38

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Andrew E. Clark, CNRS Research Professor, Paris School of Economics and Professorial Research Fellow, Well-Being Programme, Centre for Economic Performance, London School of Economics. Tom Lee, Institute for Fiscal Studies.

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1 Introduction

The improvement of individuals' lives should arguably be the fundamental task of policy-makers. There are actually two distinct parts to this task - how to measure the quality of life, and how policy can best affect it. In recent years, there has been a great deal of work that has appealed to subjective well-being to reflect overall life quality.[1] Although this work has led to fascinating insights about what is important for well-being, there is still no consensus about which well-being measure is actually the most appropriate.

There are loosely-speaking three types of subjective well-being measures - eudaimonic,[2] hedonic and cognitive. Although these are undoubtedly different in their focus, if those who fare well according to one measure also do so across all the others, then it may not greatly matter which measure is retained. By comparing the results from different measures for the same individuals, we can ascertain just how inter-related these different measures are. Clark & Senik (2011) compare a number of different measures in the well-being module of Wave 3 of the European Social Survey (ESS), and find a broadly similar covariate pattern for happiness, life satisfaction and eudaimonia (in that the explanatory variables seem to be correlated in the same way with all the well-being measures). A similar approach is taken in Clark (2016a) for a number of different well-being measures found in the British Household Panel Survey (BHPS), ESS and the Office of National Statistics' National Well-Being Programme. Again, fairly high correlations are found across a variety of measures, especially within country.

Other work has come to different conclusions. In particular, the estimated coefficients on the Cantril ladder (asking individuals about where they stand between their worst possible and best possible life) and Eudaimonia in the Gallup World Poll in Graham and Nikolova (2015) are not particularly strongly correlated. It seems fair to conclude that the question of the relationship between well-being variables remains open. OECD (2013) concludes that "eudaimonic measures of well-being cap-

[1] It can alternatively be argued that well-being is some mix of subjective and objective outcomes, perhaps in the spirit of the OECD's Better Life Index. In the remainder of the paper we will take "well-being" to refer exclusively to subjective well-being.

[2] Eudaimonia refers to the idea of flourishing or developing human potential, as opposed to pleasure, and is designed to capture elements such as mastery, relations with others, self-acceptance and purpose. Practically, eudaimonic well-being is measured by questions on autonomy, determination, interest and engagement, aspirations and motivation, and a sense of meaning, direction or purpose in life.

ture important aspects of people's subjective perceptions about their own well-being that are not covered by either life evaluations or affect"[3] (p.32).

Most work in subjective well-being has used cross-section or panel data on adults (such as the BHPS or the German Socio-Economic Panel, SOEP). This has allowed the calculation of correlations between adult well-being and current outcomes and/or events that occurred to the individual in the relatively recent past. We can broadly call these proximal variables.[4] A more recent area of study has relied on long-run cohort studies to examine the effect of covariates in the distant past (called distal variables) on current outcomes. We do of course here require data in which the distal outcomes are measured at the time when they occurred, not as the adult recalls them many years later. This has led to the use of birth-cohort datasets, where respondents are followed from birth or young age through to adulthood. It is important to distinguish the proximal and distal correlates of well-being for policy reasons. If many of the proximal variables (like income and education, say) are mainly determined by distal variables (perhaps school quality or parental income), then policy should focus on the latter rather than the former.

A number of contributions here have emphasised the importance of early childhood for adult outcomes such as income and education.[5] The analysis of well-being in this context is much scarcer. Without providing an exhaustive list, some examples include Layard et al. (2014), who combine distal and proximal factors in a life-course model of adult outcomes, including well-being (see also Clark et al., 2017). Frijters et al. (2014) also look at the predictors of adult life satisfaction using data from two British birth-cohort surveys. They find that childhood variables predict 7% of the variation in adult life satisfaction, whilst adding contemporaneous variables increases this predictive power to 15.6%. Fletcher and Schurer (2017) find that maltreatment in childhood is a strong predictor of neuroticism and conscientiousness in adulthood. Mental and physical health appear to be the key channels through which adverse childhood experiences affect later-life outcomes. Last, Wehner et al. (2016) show that low adolescent emotional stability is associated with poor adult mental health. A key driver of this channel is conscientiousness – individuals who score badly on this metric are particularly affected by a lack of emotional stability.

[3]Affect refers to mood or emotional state.

[4]See Frey & Stutzer (2010) and Clark (2016b) for overviews of the range of insights provided by the economics of well-being literature.

[5]See for example Sacerdote (2007), Cunha & Heckman (2008) and Heckman & Mosso (2014).

We here contribute to this literature by providing one of the first analyses of well-being in older age (72). Our use of a very long panel allows us to establish the distal and proximal correlates of well-being over 50 years apart. We can thus address the question of whether the distal determinants of adult well-being fade away over time.[6] Last, we are able to compare our results over two different well-being measures (happiness and eudaimonia), finding a number of differences.

The remainder of the paper is organised as follows. Section 2 presents the WLS data and the construction of our key variables. Section 3 then presents the main results regarding the distal and proximal correlates of older-age well-being, and discusses the mediating role of adult outcomes in the effect of the childhood variables. Last, Section 4 concludes.

2 Data

Our data here come from the WLS, a cohort study that has been run from 1957 to the present day in Wisconsin, USA (see Herd et al., 2014). The initial data collection took place before high-school graduation in 1957 (so that the majority of the cohort were born in 1938/1939). This cohort has been periodically re-surveyed over time. Of particular interest are the last three waves (1993, 2004 and 2011), which contain multiple well-being measures for the respondent at ages of roughly 54, 65 and 72. Both the long age span of the study and the multiple well-being measures make the WLS an attractive dataset for the purpose of our research. The majority of cohort datasets used to analyse well-being are more recent. Some exceptions are the Douglas Cohort Study, which started in 1946, the The Lothian Birth Cohorts of 1921 and 1936 (http://www.lothianbirthcohort.ed.ac.uk/) and the Aberdeen Birth Cohorts of the same two years (https://www.abdn.ac.uk/birth-cohorts/). Representative panel studies such as the BHPS (started in 1991) and the SOEP (started in 1984) provide invaluable data on contemporaneous outcomes but suffer from the relatively late starting years.[7] Of course individuals born in 1938 may be very different to those born post-World War Two - this issue can be examined as other cohorts reach comparable ages in the future.

[6] In Flèche et al. (2017), there was little attenuation of the effect of childhood on adult life satisfaction between early adulthood and middle age.

[7] There is no data on individuals born in 1938 before the ages of 52 and 45 in the BHPS and SOEP respectively.

One drawback with the WLS is that it is not a birth cohort, as data collection started only on high-school graduation at age 18. As such, although the age-18 covariates may be good proxies for childhood, they are not as complete as those that are available in the UK British Cohort Study (BCS) or National Child Development Study (NCDS). There nonetheless remains more than sufficient adult data for analysis. The fact that the cohort is restricted to high-school graduates again implies that we should be careful about making generalisations to the whole population.

A second issue is that only the three most-recent waves (1993, 2004 and 2011) contain well-being information. It is therefore not possible to see how well-being evolves over all of adult life (the earliest well-being observation is at age 54). In addition, the same well-being/covariate questions are not asked across the three years. Happiness (and health covariates) only appear in the 2004 and 2011 waves, whereas measures of eudaimonia are only available in 1993 and 2011. As a result, we will here mostly present results from 2011 well-being (when the respondents were age 72) and will use the 2004 happiness information to check for continuity over time.

We now turn to the key variables used in the analysis, starting with well-being before moving on to the distal and proximal control variables.

2.1 Well-being

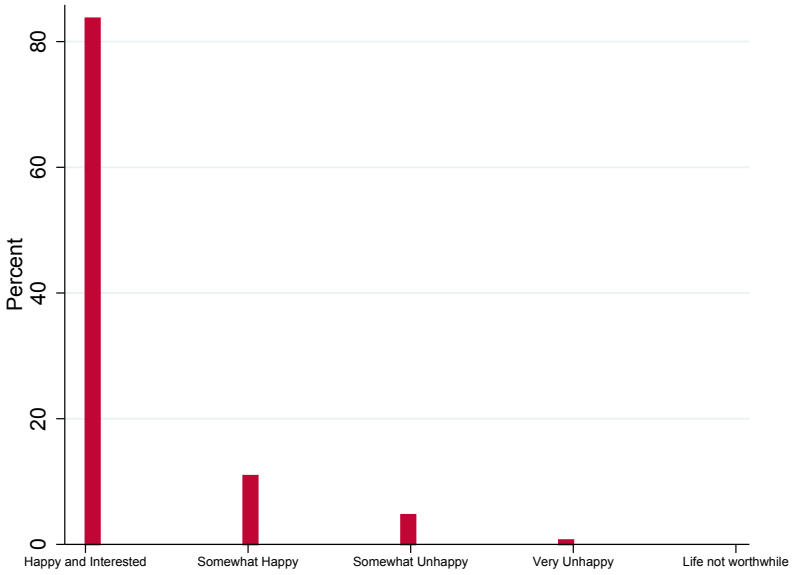
We focus on two well-being measures: happiness and eudaimonia.[8]

Happiness

The happiness variable comes from the emotion component of the Health Utilities Index (HUI). Individuals were first asked if they felt happy/unhappy with their life over the past 4 weeks. If the individual replied "happy" they were asked if they were *somewhat happy* or *happy and interested in life*. If unhappy, they were asked if they were *somewhat unhappy*, *very unhappy* or *so unhappy that life is not worthwhile.* The resulting happiness variable is then measured on a 1 to 5 scale ranging from *"So unhappy that life is not worthwhile"* to *"Happy and interested in life"*. Figure 1 shows the distribution of happiness. It is evident that the majority of respondents chose the top happiness category, reducing the variation in this outcome. Even so, there is enough variation to allow us to examine the covariates that are associated with reporting being less than *"happy and interested in life"*

[8]The full description of these well-being measures appears in Appendix A.

Figure 1: The Distribution of Happiness at age 72 in the WLS



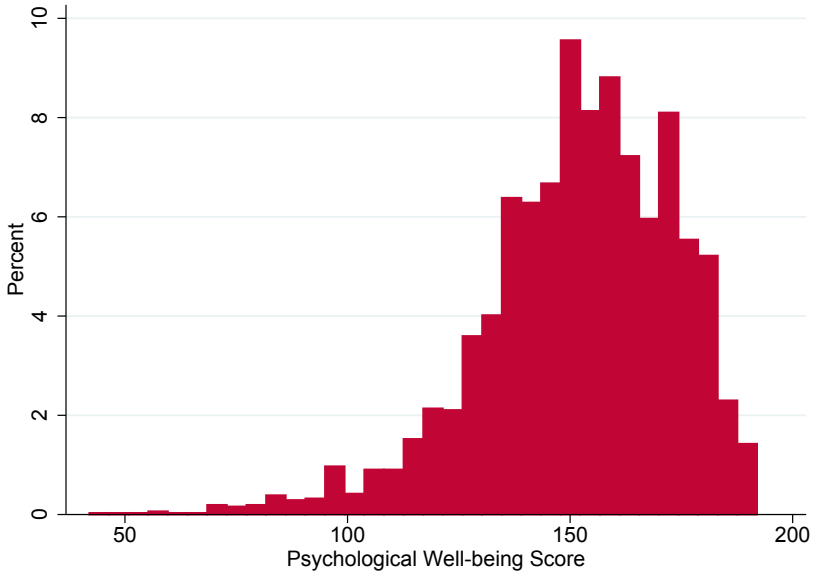
Eudaimonia

The eudaimonia scale comes from a psychological well-being model devised by Carol Ryff (1989). Questions are asked about six different aspects of life - autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance - with the answers being combined to form a composite eudaimonic measure. Although the theoretical justification for the particular aspects chosen is debated in the literature, eudaimonia will prove a useful complement to the hedonic/cognitive happiness measure.[9]

Figure 2 shows the distribution of the Ryff psychological well-being scale. It is clear that there is much more variation here than the happiness measure above, with there being is no clear bunching at any one score.

[9]See Springer & Hauser (2006) for an assessment of the scale, using in part data from the WLS.

Figure 2: The Distribution of Eudaimonia at age 72 in the WLS



2.2 Covariates

Table 1 presents the summary statistics of the distal covariates for three different attrition sub-groups.[10] Sample attrition is a concern, as the number of every-question respondents (3086) is considerably lower than the initial number of individuals surveyed (10317) and every-question respondents have different characteristics to dropouts. Across all covariates, the *Every-question Respondent* sub-group is different to both of the others, meaning that an uncorrected statistical analysis that only focuses on 2011 respondents will lead to biased estimates. Probability weighting (Wooldridge, 2002) and multiple imputation (Rubin 2004) will be used to address this problem.[11]

Regarding the last panel of Table 1, there is a substantial literature looking at the predictors of premature mortality in the WLS. Of particular interest, is the importance of adolescent IQ in predicting early death. In a well-known contribution,

[10]See Appendix B for the detailed description of all of the variables. The correlation matrix between all variables appears in Appendix F.

[11]The results in the main text use inverse-probability weighting; the multiple-imputation results (with inverse-probability weighting) can be found in Appendix D. There are only small differences between these two sets of results.

Table 1: Distal Covariate Summary Statistics by Attrition Sub-group

Variable	**Mean**	**Std. Dev.**	**Min.**	**Max.**	**N**
Every-question Respondent					
IQ Score	104.1	14.2	61	145	3086
Log Parental Income	10.6	0.7	6.6	13.6	3086
Single-Parent Household	0.06	0.24	0	1	3086
Number of Siblings	3.1	2.4	0	26	3086
Parental Education	10.2	2.7	0	21	3086
Birth Order	2.3	1.7	1	14	3086
Age of Mother at Birth	27.6	5.9	9	54	3086
Female	0.52	0.5	0	1	3086
Alive - Missed 1+ 2011 Question					
IQ Score	98.9	14.9	61	145	4844
Log Parental Income	10.5	0.7	6.7	13.6	3836
Single-Parent Household	0.12	0.33	0	1	4475
Number of Siblings	3.3	2.6	0	18	4453
Parental Education	10.1	2.8	1.5	21	4552
Birth Order	2.6	2.1	1	16	4450
Age of Mother at Birth	27.9	6.3	9	69	3518
Female	0.56	0.5	0	1	4734
Dead pre-2011					
IQ Score	99.0	15.1	61	145	2254
Log Parental Income	10.5	0.7	6.7	13.6	1936
Single-Parent Household	0.12	0.32	0	1	1905
Number of Siblings	3.3	2.6	0	22	1893
Parental Education	10.1	2.6	2	21.5	2125
Birth Order	2.5	2.0	1	21	1893
Age of Mother at Birth	27.2	6.1	9	51	1252
Female	0.43	0.5	0	1	2346

Note: *Every-question Respondent* refers to the sub-group of respondents who provided information on all of the distal (1957) and proximal (2011) covariates.

Gottfredson (2004) argued that early-life intelligence in itself was an important determinant of later-life health outcomes. More recent work using the WLS, by Hauser & Palloni (2012) and Maenner et al. (2015), has instead suggested that educational attainment is in fact a stronger predictor of longevity than raw intelligence. Although longevity is not the focus of this paper, we also find that the best early-life predictor of premature mortality is education. A number of contributions have looked at other determinants of mortality using WLS data: Pudrovska & Anikputa (2013) show that although breast-cancer incidence is higher for more-educated women, the mortality rate is lower; Yonker et al. (2013) find that later onset of the menopause is associated with lower mortality; and in Reither et al. (2009) overweight adolescents are twice as likely to suffer premature death as their non-overweight counterparts.

Table 2: Proximal Covariate Summary Statistics

Variable	**Mean**	**Std. Dev.**	**Min.**	**Max.**	**N**
Years of Schooling	13.8	2.4	12	20	3086
Log Household Income	10.0	1.0	1.1	13.3	3086
Separated	0.10	0.30	0	1	3086
Widowed	0.12	0.33	0	1	3086
Never Married	0.03	0.18	0	1	3086
Unemployed	0.06	0.24	0	1	3086
Retired	0.64	0.48	0	1	3086
Social Participation (0-64)	22.8	7.0	0	58	3086
Mental Health (0-140)	125.4	14.7	8	140	3086
Physical Health (0.6-1)	0.99	0.02	0.78	1	3086
Female	0.52	0.5	0	1	3086

Note: These statistics are calculated using the *Every-question Respondent* sub-group.

Table 2 presents the proximal covariate summary statistics from the *Every-question respondent* sub-group. Most of the variables are fairly self-explanatory, although mental and physical health probably require greater illumination. The summary statistics provide a useful snapshot of the life circumstances of WLS respondents at age 72. A sizeable number of individuals are widowed (12%), the majority have retired (64%) and most are in fairly good health.

Our mental-health variable comes from the CES-D depression scale.[12] This scale

[12]Reverse coded so that a high *Mental Health* score indicates a low CES-D score.

is calculated from 20 questions about how many days over the past week the individual has felt certain emotions (16 negative, 4 positive) e.g. *"On how many days during the past week did you feel lonely?"*. The test was designed in 1977 by Lenore Radloff, not as a test for clinical depression *per se*, but rather as an indicator of psychological distress. Mental health is different from happiness. In Flèche and Layard (2017), mental health and life satisfaction are not particularly strongly correlated (with correlation coefficients between 0.1 and 0.4); the analogous figure in our WLS data is also 0.4. They also do not have the same correlates (as we will see below in our data in Figures 3 and 5). We would ideally like to have diagnostic measures of mental health, as often used in Clark et al. (2017). This kind of measure is not available in the WLS. However, the analysis of life satisfaction in Clark et al. (2017) using diagnostic mental-health measures yields results that are in line with those using survey mental-health measures (such as the GHQ-12 or the SF-36).

Physical Health is a composite score calculated from six of the eight Health Utilities Index Mark 3 (HUI) measures - vision, hearing, speech, ambulation, dexterity and pain.[13]

3 Results

We now ask how much of the variation across individuals in our two later-life well-being variables can be explained by the distal and proximal correlations. To do so we consider three different specifications: (1) distal-only, (2) proximal-only and (3) both together. All variables (except for gender) are standardised so that their estimated coefficients reveal their relative importance in explaining well-being at age 72.[14]

Figure 3 depicts the relationships between the different covariates and happiness, evaluated at age 72 in 2011.[15] Looking at the distal-only specification, we can see that the biggest single happiness effect comes from being female. This gender difference in well-being is well-known in the literature: women often report higher values

[13]Emotion (where the happiness well-being measure comes from) and cognition (not directly related to physical health) are the two excluded measures.

[14]The squared value of a beta coefficient represents the variable's independent contribution (ignoring its covariance with the other explanatory variables) to the R^2 of the regression.

[15]The analogous happiness results at age 65 in 2004 can be found in Appendix E. There are no great differences between the two sets of results.

on cognitive-evaluate measures of well-being than do men, but also higher stress scores (Nolen-Hoeksema and Rusting, 1999: see also Kahneman and Deaton, 2010 and Chapter 6 of the 2015 World Happiness Report).[16] There is also a moderate positive effect from parental education. The fact that variables from 50+ years ago have predictive power over later-life well-being over 50 years later is in itself of interest. The fraction of well-being explained by the childhood variables is only small here. This is not necessarily a reason to neglect the findings as unimportant. If our results here at age 72 are representative of adulthood, then a change in childhood will be felt through every single year of adulthood, making for a large cumulative effect. It may of course even be that childhood factors have a larger effect under the age of 72, in which case we will underestimate the cumulative effect.

The introduction of the proximal variables produces some changes in the distal coefficients (as would be expected if these latter predict the proximal outcomes). The coefficient on *Female* becomes small and insignificant, indicating that the proximal variables almost entirely mediate the effect of gender. Moreover, the IQ score flips sign from positive to negative. Although intelligence in the reduced form has a small positive coefficient, once we control for the later-life outcomes that are correlated with intelligence, the effect of the IQ score becomes negative. This "residual" effect of IQ on well-being perhaps reflects the greater expectations of those with more education, or that education is associated with reference groups with higher income (to the extent that, despite own higher absolute income, relative income falls). Education was found to be negatively correlated with the GHQ measure of well-being in the first wave of the BHPS in Clark and Oswald (1994). In Clark et al. (2015), education was explicitly shown to be positively correlated with how happy the individuals *thought* that they should be. Oreopoulos and Salvanes (2011) find that a rise in the school-leaving age increased the well-being of those affected by the change, although Clark and Jung (2016) cannot replicate the UK results in BHPS data, with a life-satisfaction effect that is either zero or negative.

Regarding the proximal variables, by far the strongest predictor of age-72 happiness is mental health. This is in line with the results in the UK BCS and NCDS in Flèche et al. (2017) at ages up to the early 50s. A one standard-deviation rise in mental health is associated with 41% of a standard deviation higher happiness. On the contrary, physical health is nowhere near as important. Although there is a positive relationship with happiness, the coefficient is only one-fifth of the size of

[16]This gender happiness gap disappears in countries where women's rights are reduced: see Graham and Chattopadhyay (2013).

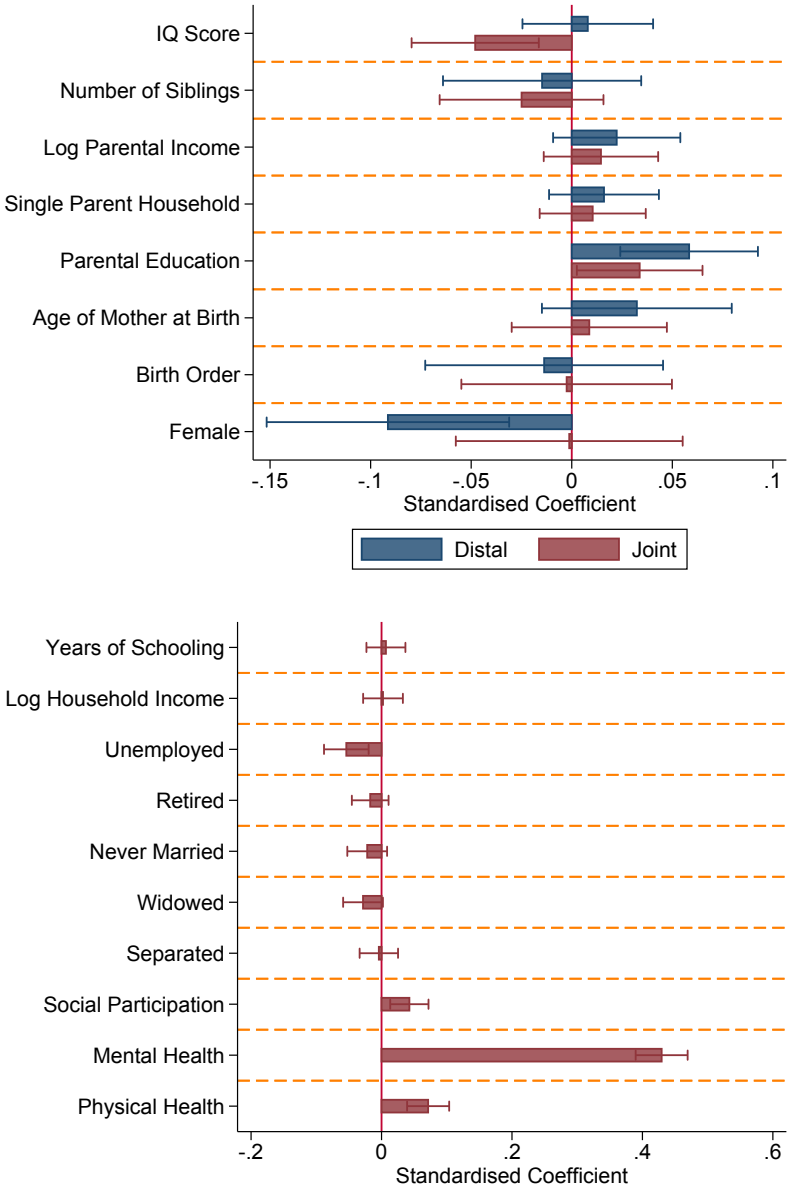
that on mental health. Other notable proximal factors at the bottom of Figure 1 are unemployment and widowhood, with negative estimated coefficients, and social participation, for which the estimated coefficient is positive.

Figure 4 shows the corresponding coefficients for eudamonia. In the distal-only specification, female, childhood IQ and parental income and education are all associated with higher eudaimonia scores at age 72; with the inclusion of the proximal variables all of these bar parental education continue to have independent effects on later-life eudaimonia. As for happiness above, the coefficient on IQ score flips with the inclusion of proximal variables - providing further evidence consistent with expectation effect. It is unclear quite why parental income should be a good predictor of eudaimonia 50+ years later: it may be the case that higher parental income at a young age is associated with more choice over life-decisions such as education and career path. Graham and Nikolova (2015) find that own income is positively correlated with eudaimonia in Gallup World Poll data. We here find no role for proximal income but only for parental income, perhaps suggesting that income matters more early on in life. The fact that women have higher eudaimonia scores goes against the ESS findings of Clark & Senik (2011), although it should be underlined that the WLS and ESS eudaimonia measures are not the same, and of course the age ranges are very different.

Looking at the proximal covariates, we again see that mental health is a strong predictor of well-being, as is social participation. This latter may however reflect one of the six components of the eudaimonia score being *Positive Relationships*. It is worth noting here that social participation is also positively correlated with happiness, where there is of course no mechanical relationship. There is no significant correlation between physical health and eudaimonia, indicating that a sense of flourishing is much more closely linked to mental/social processes.

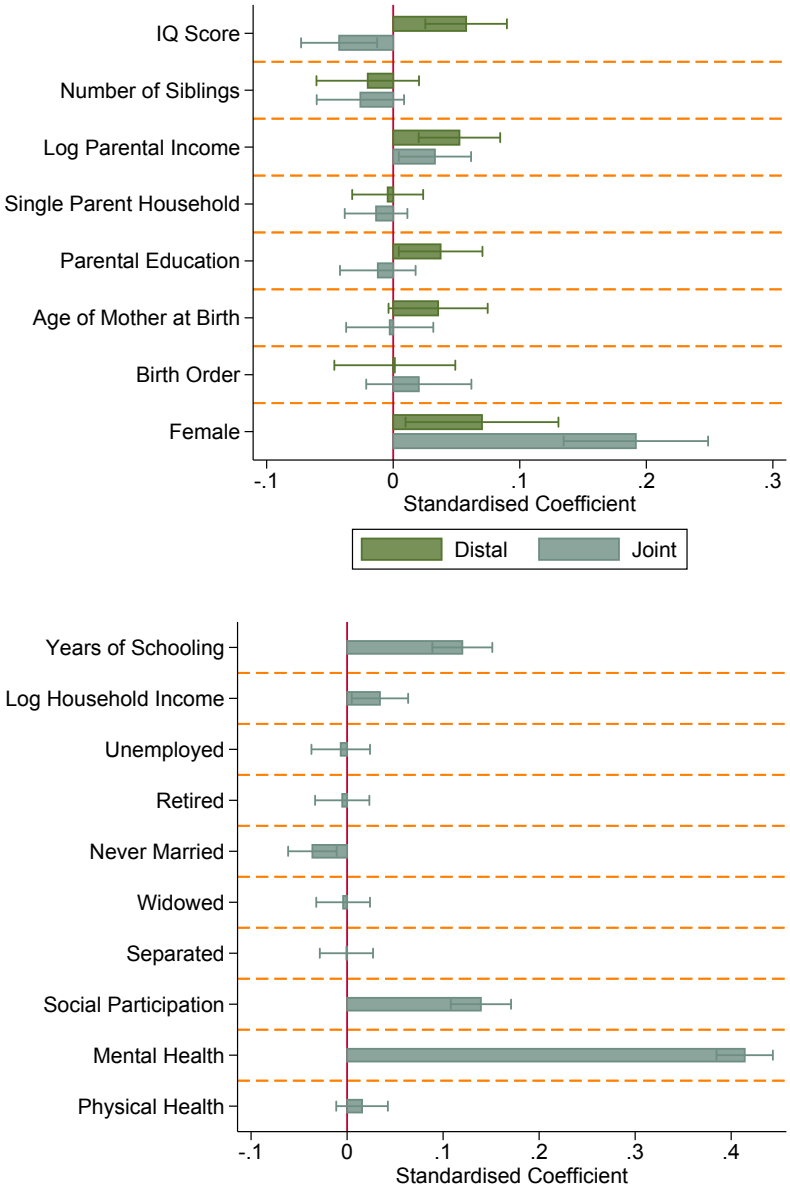
Unemployment is associated with lower happiness scores, but not with significantly lower eudaimonia. The latter may reveal that labour-force status is less relevant at age 72 than at younger ages. Clark & Senik (2011) consistently find that the unemployed report lower levels of eudaimonia.

Figure 3: The Distal and Proximal Correlates of Happiness at age 72



Note: The lines around the bars are the 90% confidence intervals. The full regression table appears in Appendix C. The R^2 figures for the distal-only and the distal plus proximal specifications are 0.007 and 0.221 respectively. The proximal-only specification is not shown as the results there are very similar to those in the joint specification.

Figure 4: The Distal and Proximal Correlates of Eudaimonia at age 72



Note: The lines around the bars are the 90% confidence intervals. The full regression table appears in Appendix C. The R^2 figures for the distal-only and the distal plus proximal specifications are 0.015 and 0.241 respectively. The proximal-only specification is not shown as the results there are very similar to those in the joint specification.

Two of the most-commonly examined "economic" variables - income and years of schooling - do not have strong effects on well-being. Years of schooling does turn out to be a good predictor of eudaimonia (as in Clark & Senik, 2011) but not of happiness. This may show that education is linked to the ability to make good life decisions. Household income has no independent effect on either happiness or eudaimonia. This is contrary to the ESS results in Clark & Senik (2011), where income is positively correlated with life satisfaction, happiness and four measures of eudaimonia. It is important to note here that this may reflect income not being a good measure of financial resources in later-life (wealth may matter more at this age). Alternatively, financial concerns in later life may have become of only secondary importance compared to factors such as health and social participation. If this is the case, a speculative conclusion is that some government spending on income support may be usefully diverted to provide a more comprehensive health and social-care system.

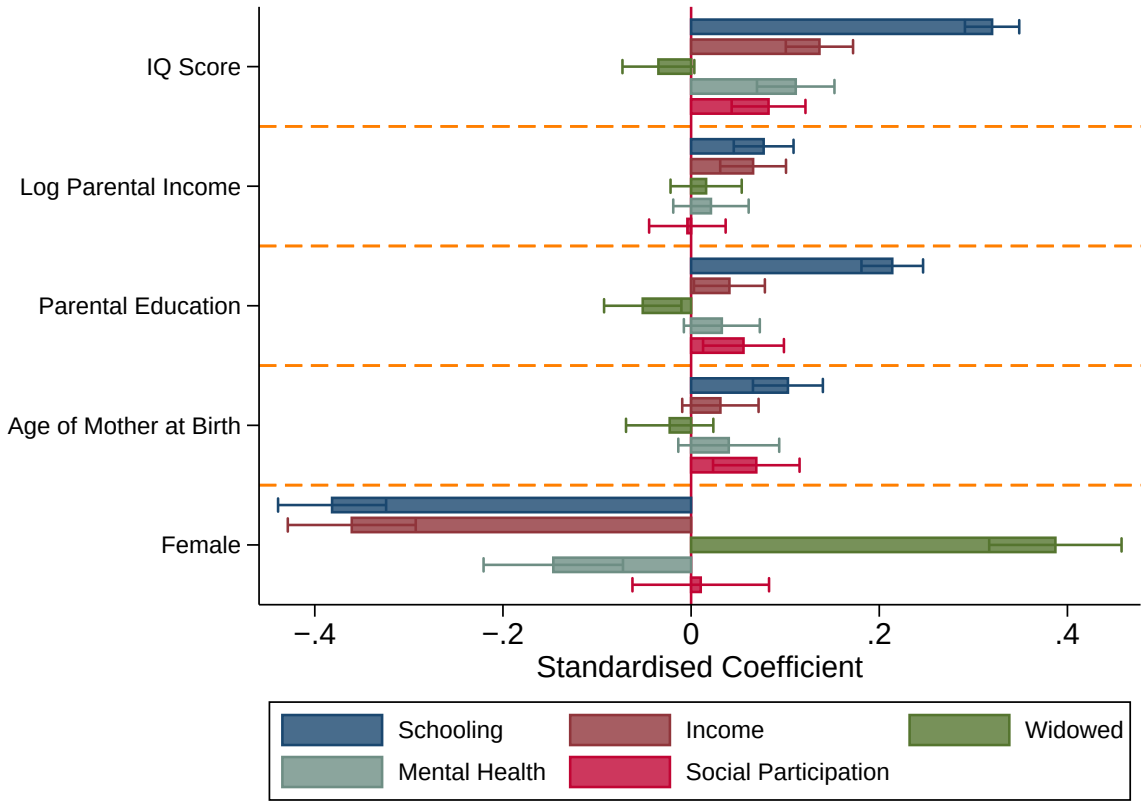
In general, the R^2 figures from the distal-only specification are small. However, as noted above, even a small effect over 50 years can end up producing a quite large cumulative contribution. A second point is that our set of distal variables is restricted (as we only start measurement at high-school graduation) and we do not have information on childhood emotional health, which was found to be so important in Clark et al. (2017), for example.

Overall, there are a number of differences in the correlates of happiness and eudaimonia in our sample of older Americans. Of the 17 variables in the joint distal and proximal specification (columns 3 and 6 in Appendix Table C1), only two are significant and of the same sign in both the happiness and eudaimonia regressions, with another seven being insignificant in both. The correlation coefficient between the joint determinants of happiness and eudaimonia here is 0.92, which is primarily driven by the importance of mental health for both well-being measures. The high correlation coefficient is similar to the analogous figures in the ESS, BHPS and ONS in Clark (2016a).

3.1 Channels

The fact that the distal coefficients changed with the introduction of proximal variables to the regression reveals mechanically that the distal and contemporaneous variables are correlated. Figure 3 considers the size of the different distal-proximal channels.

Figure 5: Distal-Proximal Channel Coefficients



Note: These coefficients come from separate regressions of each proximal variable on the set of distal variables. The five distal and proximal variables that appear in each panel of the figure above are those with the greatest channel effect (the highest partial R^2). The lines around the bars are the 90% confidence intervals. The full regression results appear in Appendix C.

Of particular interest is the large change in the estimated coefficient on the childhood IQ score with the addition of the proximal variables: from zero to negative for happiness and from positive to negative for eudaimonia. Figure 5 shows that the early-life IQ score is positively correlated with a number of age-72 outcomes, including mental health (as in Flèche et al., 2017). Later-life mental health is one

of the main correlates of adult life satisfaction, as can be seen in Figures 3 and 4, which explains why the estimated coefficient on *IQ Score* falls with the introduction of the proximal variables. A similar story can be told for years of schooling and eudaimonia: a higher childhood IQ score predicts adult years of schooling, which in turn is associated with higher levels of later-life eudaimonia.

The effect of any policy interventions that take place in early life should be predicted using the distal-only (reduced-form) specification. A policy aimed at childhood cognitive performance or parental education will thus be predicted to improve later-life well-being (as well, of course, as higher well-being throughout life) through a variety of channels. This is not of course to say that childhood interventions are the only ones that matter. As the bottom panels of Figures 1 and 2 show, conditional on childhood, policies aimed at education success and later-life mental health and social participation are also predicted to increase well-being at older ages.

4 Conclusion

This analysis has shown a clear reduced-form impact of IQ scores, parental income and parental education on well-being 50+ years later. Family and early-life outcomes are thus associated with higher levels of well-being well into old age, and more so for eudaimonia than for happiness. This arguably underlines the large returns (as they last for so long) of interventions in these domains at young ages. Adding proximal variables to the analysis allows us to estimate the indirect and direct effect of the distal factors and the corresponding channels of influence. We find strong channel effects (in particular through mental health and years of schooling), with some early-life outcomes remaining significant predictors of well-being at age 72 even when the proximal variables are controlled for. This is of course not to say that we should neglect proximal variables in determining policy for well-being. In particular, interventions that target later-life social participation and mental health could have a substantial impact on later-life well-being.

One important caveat to any these results is that we do not control for fixed effects. It may be that individuals with better distal outcomes also had some genetic predisposition to being content with life. In that case, early-life interventions may not affect well-being. The same argument applies to social participation: extroverted/optimistic individuals may enjoy more social participation and report greater subjective well-being, and it may be that making unsociable people socialise more

will actually reduce their well-being. Controlling for fixed effects using panel data would defeat the purpose of our analysis here: we only have one childhood, which remains constant through our adult lives. We can however imagine identification strategies for some adult outcomes, and perhaps greater analysis of the role of both personality variables (although these might be thought to be partly endogenous: see Boyce et al., 2013) and genetic factors (Pluess, 2015) in determining adult well-being.

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Appendix A: Well-being Measures

A.1 Happiness

The happiness measure comes directly from the emotion component of the Health Utilities Index, the score taken being the level achieved (reverse-coded).

Level	Description
1	The respondent has been happy and interested in life.
2	The respondent has been somewhat happy.
3	The respondent has been somewhat unhappy.
4	The respondent has been very unhappy.
5	The respondent has been unhappy that life is not worthwhile

A.2 Eudaimonia

Eudaimonia is ascertained by asking individuals thirty-two questions over six eudaimonic aspects of life. These are self-acceptance, purpose in life, positive relationships, environmental mastery, personal growth and autonomy. All questions are answered on a six-point scale:

1. Agree Strongly
2. Agree Moderately
3. Agree Slightly
4. Disagree Slightly
5. Disagree Moderately
6. Disagree Strongly

The score across the questions is then summed (reverse coded for positive questions) to calculate the psychological well-being score.

Appendix B: Covariates

Distal Variables

IQ Score (1957)	IQ score mapped from raw Henmon-Nelson test score
Log Parental Income (1957-60)	Average Annual Parental Income (1957-1960) - from tax data (Corrected for inflation using the CPI index from the Bureau of Labor Statistics)
Parental Education (1957)	Average number of years of schooling of parents
Birth Order (1957)	Birth order of respondent
Single Parent Household (1975)	*Did you live with both parents most of time up until 1957?*
Number of Siblings (1975)	Total number of siblings
Age of Mother at Birth (1993)	Calculated from the mother's year of birth (1993) and date of birth of respondent (1957)

Proximal Variables

Years of Schooling (1975)	Total years of schooling
Log Household Income (2011)	Household income per OECD adult equivalent (extra adults 0.7; children 0.5) For respondent and spouse: Reported income from wages, farm, interest, social security, pensions, public assistance, other government programs, child support, alimony, and other sources of income - child support and alimony expenditure For other household members: Total reported income (Corrected for inflation using the CPI index from the Bureau of Labor Statistics)
Social Participation (2011)	Sum of replies to participation question across 17 types of groups* *What is your level of involvement with...?* Great Deal = 4 Quite a Bit = 3 Some = 2 Very little = 1 Not involved = 0
Marital Status (2011)	*What is your current marital status?* Married (omitted dummy variable category) Separated Divorced (Included under separated dummy variable) Widowed Never married
Employment Status (2011)	Constructed from variables: 1993: *Current employment status* 1993: *Ever work in paid labor force from 1975 to 1992/93* 2004/2011: *Flag for current employment and retirement status*
Mental Health (2011)	CES-D Scale (See Section A1 for more details)
Physical Health (2011)	Physical health components of the Health Utilities Index (See Section A2 for more details)

*(1) Church-connected groups, but not the church itself (2) church, temple or other place of worship (3) Labour unions
(4) Veterans' Organizations (5) Fraternal organizations or lodges (6) Business or civic groups (7) Parent-teachers' associations
(8) Community centres (9) Organisations of people of the same nationality (10) Sport teams (11) Country clubs
(12) Youth groups, for example as a Scout leader (13) Professional groups (14) Political clubs or organizations
(15) Neighbourhood improvement organisations (16) Charity of welfare organizations (17) Hobby groups

B1: Mental Health

The mental health covariates come from the CES-D scale - based on 20 question (16 negative + 4 positive) about how many days over the past week respondents felt a certain way in this past week. The CES-D scale is the total number of days across the 20 questions (negative questions are reverse-coded). The questions are as follows:

Negative Questions (reverse coded):

1. *On how many days during the past week did you feel you could not shake off the blues even with help from your family and friends?*
2. *On how many days during the past week did you feel bothered by things that usually don't bother you?*
3. *On how many days during the past week did you think your life had been a failure?*
4. *On how many days during the past week did you feel that people were unfriendly?*
5. *On how many days during the past week did you feel lonely?*
6. *On how many days during the past week did you have crying spells?*
7. *On how many days during the past week did you feel that people disliked you?*
8. *On how many days during the past week did you feel sad?*
9. *On how many days during the past week did you feel depressed?*
10. *On how many days during the past week did you have trouble keeping your mind on what you were doing?*
11. *On how many days during the past week did you not feel like eating, your appetite was poor?*
12. *On how many days during the past week did you feel you were just as good as other people?*
13. *On how many days during the past week did you feel fearful?*
14. *On how many days during the past week did you sleep restlessly?*

15. *On how many days during the past week did you talk less than usual?*

16. *On how many days during the past week did you feel you could not get going?*

Positive questions:

1. *On how many days during the past week did you feel happy?*

2. *On how many days during the past week did you enjoy life?*

3. *On how many days during the past week did you feel hopeful about the future?*

4. *On how many days during the past week did you feel you were just as good as other people?*

B2: Physical Health

Physical health is calculated from six of the eight components of the Health Utilities Index - vision, hearing, speech, ambulation, dexterity and pain. Emotion (where happiness well-being measure comes from) and cognition (not directly related to physical health) are the two excluded measures. Health over each of these components is ascertained by asking how the respondent has fared over the past four weeks. The six different domains and their associated questions are listed below - possible responses are Yes or No, unless otherwise stated[17]

[17]It is important to note that not all questions are asked to every respondent, rather the responses given affect the number of questions asked. For instance replying Yes to *During the past 4 weeks, have you been able to see well enough to read ordinary newsprint without glasses or contact lenses?* stops all further Vision questions and the highest vision level is assigned.

Vision

- *During the past 4 weeks, have you been able to see well enough to read ordinary newsprint without glasses or contact lenses?*
- *During the past 4 weeks, have you been able to see well enough to read ordinary newsprint with glasses or contact lenses?*
- *During the past 4 weeks, have you been able to see at all?*
- *During the past 4 weeks, have you been able to see well enough to recognize a friend on the other side of the street without glasses or contact lenses?*
- *During the past 4 weeks, have you been able to see well enough to recognize a friend on the other side of the street with glasses or contact lenses?*

Level	Description
1	The respondent has been able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, without glasses or contact lenses
2	The respondent has been able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, but with glasses.
3	The respondent has been able to read ordinary newsprint with or without glasses but unable to recognize a friend on the other side of the street, even with glasses.
4	The respondent has been able to recognize a friend on the other side of the street with or without glasses but unable to read ordinary newsprint, even with glasses.
5	The respondent has been unable to read ordinary newsprint and unable to recognize a friend on the other side of the street, even with glasses.
6	The respondent has been unable to see at all.

Hearing

- *During the past 4 weeks, have you been able to hear what is said while in a group conversation with at least three other people without a hearing aid?*
- *During the past 4 weeks, have you been able to hear what is said in a group conversation with at least three other people with a hearing aid?*
- *During the past 4 weeks, have you been able to hear what is said in a conversation with one other person in a quiet room without a hearing aid?*
- *During the past 4 weeks, have you been able to hear what is said in a conversation with one other person in a quiet room with a hearing aid?*

Level	Description
1	The respondent has been able to hear what is said in a group conversation with at least three other people, without a hearing aid.
2	The respondent has been able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but requires a hearing aid to hear what is said in a group conversation with at least three other people.
3	The respondent has been able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, and able to hear what is said in a group conversation with at least three other people, with a hearing aid.
4	The respondent has been able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
5	The respondent has been able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
6	The respondent has been unable to hear at all.

Speech

- *During the past 4 weeks, have people who do not know you understood you completely when you speak?*
- *During the past 4 weeks, have people who do not know you understood you partially when you speak?*
- *During the past 4 weeks, have people who know you well understood you completely when you speak?*
- *During the past 4 weeks, have people who know you well understood you partially when you speak?*
- *During the past 4 weeks, have you been able to speak at all?*

Level	**Description**
1	The respondent has been able to be understood completely when speaking with strangers or friends.
2	The respondent has been able to be understood partially when speaking with strangers but able to be understood completely when speaking with people who know me well.
3	The respondent has been able to be understood partially when speaking with strangers or people who know me well. .
4	The respondent has been unable to be understood when speaking with strangers but able to be understood partially by people who know me well.
5	The respondent has been unable to be understood when speaking to other people (or unable to speak at all).

Ambulation

- *During the past 4 weeks, have you been able to bend, lift, jump and run without difficulty and without help or equipment of any kind?*
- *During the past 4 weeks, have you been able to walk around the neighborhood without difficulty and without help or equipment of any kind?*
- *During the past 4 weeks, have you been able to walk around the neighborhood with difficulty but without help or equipment of any kind?*
- *During the past 4 weeks, have you been able to walk at all?*
- *During the past 4 weeks, have you needed mechanical support, such as braces or a cane or crutches, to be able to walk around the neighborhood?*
- *During the past 4 weeks, have you needed the help of another person to walk?*
- *During the past 4 weeks, have you needed a wheelchair to get around the neighborhood?*
- *During the past 4 weeks, have you needed the help of another person to get around in the wheelchair?*

Level	**Description**
1	The respondent has been able to walk around the neighborhood without difficulty, and without walking equipment.
2	The respondent has been able to walk around the neighborhood with difficulty; but does not require walking equipment or the help of another person.
3	The respondent has been able to walk around the neighborhood with walking equipment, but without the help of another person.
4	The respondent has been able to walk only short distances with walking equipment, and requires a wheelchair to get around the neighborhood.
5	The respondent has been unable to walk alone, even with walking equipment.
6	The respondent could not walk at all.

Dexterity

- *During the past 4 weeks, have you had full use of both hands and 10 fingers?*
- *During the past 4 weeks, have you needed the help of another person because of limitations in the use of your hands or fingers?*
- *During the past 4 weeks, due to limitations in the use of your hands or fingers, have you needed the help of another person with some tasks, most tasks, or all tasks?*
- *During the past 4 weeks, have you needed special equipment, for example, special tools to help with dressing or eating, because of limitations in the use of your hands or fingers?*
- *During the past 4 weeks, have you been able to eat, bathe, dress and use the toilet without difficulty?*
- *During the past 4 weeks, have you needed the help of another person to eat, bathe, dress or use the toilet?*
- *During the past 4 weeks, have you needed special equipment or tools to eat, bathe, dress or use the toilet?*

Level	Description
1	The respondent has had full use of two hands and ten fingers.
2	The respondent has had limitations in the use of hands or fingers, but does not require special tools or help of another person.
3	The respondent has had limitations in the use of hands or fingers; s/he is independent with use of special tools and does not require the help of another person.
4	The respondent has had limitations in the use of hands or fingers; s/he requires the help of another person for some tasks and is not independent even with use of special tools.
5	The respondent has had limitations in the use of hands or fingers; s/he requires the help of another person for most tasks and is not independent even with use of special tools.
6	The respondent has had limitations in use of hands or fingers; s/he requires the help of another person for all tasks and is not independent even with use of special tools.

Pain

- *During the past 4 weeks, have you had any trouble with pain or discomfort?*
- *During the past 4 weeks, how many of your activities were limited by pain or discomfort? [Possible responses: None, A few, Some, Most, All]*

Level	Description
1	The respondent has been free of pain and discomfort
2	The respondent has been in mild to moderate pain that prevents no activities.
3	The respondent has been in moderate pain that prevents a few activities.
4	The respondent has been in moderate to severe pain that prevents some activities.
5	The respondent has been in severe pain that prevents most activities.

Calculation

In order to obtain a single overall measure of health the different domains must be combined. Each level is assigned a domain-specific score between 0 and 1, as shown in Table B.1, and the average score is taken.

Table B.1: Domain Level Score

Level	Vision	Hearing	Speech	Ambulation	Dexterity	Pain
1	1.00	1.00	1.00	1.00	1.00	1.00
2	0.98	0.95	0.94	0.93	0.95	0.96
3	0.89	0.89	0.89	0.86	0.88	0.90
4	0.84	0.80	0.81	0.73	0.76	0.77
5	0.75	0.74	0.68	0.65	0.65	0.55
6	0.61	0.61		0.58	0.56	

Appendix C: Regression Tables

Table C1: The Relationship between Distal/Proximal Covariates and 2011 Well-being

	(1) Happiness	(2) Happiness	(3) Happiness	(4) Eudaimonia	(5) Eudaimonia	(6) Eudaimonia
Distal Covariates						
IQ Score	0.00797		-0.0480**	0.0576***		-0.0427**
	(0.0197)		(0.0192)	(0.0196)		(0.0183)
Number of Siblings	-0.0147		-0.0250	-0.0201		-0.0259
	(0.0299)		(0.0248)	(0.0246)		(0.0210)
Log Parental Income	0.0224		0.0145	0.0523***		0.0330*
	(0.0192)		(0.0173)	(0.0196)		(0.0174)
Single Parent Household	0.0160		0.0104	-0.00436		-0.0135
	(0.0166)		(0.0160)	(0.0170)		(0.0151)
Parental Education	0.0583***		0.0338*	0.0375*		-0.0122
	(0.0208)		(0.0190)	(0.0201)		(0.0182)
Age of Mother at Birth	0.0324		0.00872	0.0355		-0.00275
	(0.0287)		(0.0234)	(0.0238)		(0.0209)
Birth Order	-0.0137		-0.00254	0.00128		0.0202
	(0.0359)		(0.0318)	(0.0290)		(0.0253)
PV						
Years of Schooling		0.00607	0.00672		0.106***	0.120***
		(0.0161)	(0.0182)		(0.0167)	(0.0190)
Log Household Income		0.00105	0.00226		0.0331*	0.0342*
		(0.0185)	(0.0185)		(0.0177)	(0.0179)
Unemployed		-0.0513**	-0.0540***		-0.00479	-0.00665
		(0.0208)	(0.0208)		(0.0185)	(0.0185)
Retired		-0.0156	-0.0174		-0.00394	-0.00506
		(0.0170)	(0.0171)		(0.0172)	(0.0172)
Never Married		-0.0213	-0.0220		-0.0356**	-0.0361**
		(0.0184)	(0.0185)		(0.0155)	(0.0154)
Widowed		-0.0278	-0.0284		-0.00341	-0.00413
		(0.0185)	(0.0185)		(0.0170)	(0.0170)
Separated		-0.00333	-0.00413		-0.00122	-0.000714
		(0.0180)	(0.0179)		(0.0168)	(0.0168)
Social Participation		0.0419**	0.0427**		0.137***	0.139***
		(0.0179)	(0.0178)		(0.0192)	(0.0191)
Mental Health		0.428***	0.429***		0.411***	0.414***
		(0.0242)	(0.0242)		(0.0177)	(0.0178)
Physical Health		0.0734***	0.0715***		0.0173	0.0156
		(0.0195)	(0.0196)		(0.0162)	(0.0163)
Female	-0.0914**	-0.00806	-0.00125	0.0701*	0.184***	0.192***
	(0.0366)	(0.0337)	(0.0343)	(0.0367)	(0.0345)	(0.0347)
Observations	3086	3086	3086	3086	3086	3086
Adjusted R^2	0.007	0.219	0.221	0.015	0.240	0.241

Note: An indicator variable is included for extreme values of age of mother at birth (<15 or >50)

Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C2: 2011 Channels

	(1) Years of Schooling	(2) Log Household Income	(3) Widowed	(4) Mental Health	(5) Social Participation	(6) Separated	(7) Never Married	(8) Unemployed	(9) Retired	(10) Physical Health
IQ Score	0.321***	0.138***	-0.0402**	0.110***	0.0831***	-0.000321	0.0182	-0.0270	-0.0130	0.00270
	(0.0147)	(0.0183)	(0.0199)	(0.0210)	(0.0195)	(0.0192)	(0.0197)	(0.0208)	(0.0197)	(0.0204)
Number of Siblings	-0.0362**	-0.0370	0.0155	0.0111	0.0363	-0.0000215	-0.0230	-0.0343	-0.0476*	0.0186
	(0.0179)	(0.0237)	(0.0299)	(0.0306)	(0.0251)	(0.0261)	(0.0185)	(0.0268)	(0.0254)	(0.0258)
Log Parental Income	0.0772***	0.0663***	0.0157	0.0208	-0.00332	-0.00144	0.00385	0.0308	0.00442	0.00775
	(0.0162)	(0.0179)	(0.0193)	(0.0205)	(0.0202)	(0.0217)	(0.0168)	(0.0198)	(0.0203)	(0.0208)
Single Parent Household	-0.00358	0.0344***	0.0301	0.0277	-0.0123	0.00548	0.00669	0.0234	0.00994	-0.0480*
	(0.0137)	(0.0130)	(0.0206)	(0.0194)	(0.0185)	(0.0190)	(0.0190)	(0.0215)	(0.0183)	(0.0255)
Parental Education	0.214***	0.0406**	-0.0522**	0.0327	0.0557***	0.0308	-0.00295	-0.0282	0.0232	0.0598***
	(0.0168)	(0.0193)	(0.0210)	(0.0207)	(0.0215)	(0.0213)	(0.0208)	(0.0219)	(0.0204)	(0.0206)
Age of Mother at Birth	0.103***	0.0319	-0.0240	0.0396	0.0671***	-0.0357	0.0594**	-0.0249	-0.0480**	0.0147
	(0.0189)	(0.0207)	(0.0236)	(0.0273)	(0.0228)	(0.0245)	(0.0260)	(0.0292)	(0.0238)	(0.0242)
Birth Order	-0.0401*	0.0490*	-0.0370	-0.0162	-0.0646**	0.0191	-0.0199	-0.00594	0.0923***	-0.0191
	(0.0227)	(0.0267)	(0.0312)	(0.0321)	(0.0302)	(0.0303)	(0.0277)	(0.0340)	(0.0300)	(0.0316)
Female	-0.383***	-0.363***	0.385***	-0.147***	0.0128	0.206***	-0.00425	0.0593	0.177***	-0.0848**
	(0.0292)	(0.0348)	(0.0360)	(0.0378)	(0.0362)	(0.0367)	(0.0358)	(0.0375)	(0.0368)	(0.0373)
Observations	3089	3089	3089	3089	3089	3089	3089	3089	3089	3089
Adjusted R^2	0.294	0.068	0.040	0.023	0.015	0.009	0.004	0.003	0.009	0.006

Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix D: Multiple Imputation

Table D1: The Relationship between Distal/Proximal Covariates and 2011 Well-being (Multiple Imputation)

	(1) Happiness	(2) Happiness	(3) Happiness	(4) Eudaimonia	(5) Eudaimonia	(6) Eudaimonia
Distal Covariates						
IQ Score	0.0146		-0.0535***	0.0624***		-.0446***
	(0.0154)		(0.0147)	(0.0149)		(0.0139)
Log Parental Income	0.0110		0.0083	0.0500***		0.0364***
	(0.0159)		(0.0142)	(0.0192)		(0.0142)
Parental Education	0.0583***		0.0348**	0.0494**		0.0034
	(0.0154)		(0.0143)	(0.0200)		(0.0142)
Number of Siblings	-0.0093		-0.0174	0.0010		0.0001
	(0.0156)		(0.0139)	(0.0175)		(0.0133)
Single Parent Household	0.0254*		0.0141	0.0360 ***		0.0100
	(0.0138)		(0.0127)	(0.0135)		(0.0127)
Birth Order	-0.0121		-0.0026	-0.0153		0.0014
	(0.0156)		(0.0139)	(0.0175)		(0.0115)
Age of Mother at Birth	0.0325		0.0104	0.0572 ***		0.0202
	(0.0199)		(0.0239)	(0.0181)		(0.0164)
Proximal Covariates						
Years of Schooling		0.0142	0.0113		0.945***	0.101***
		(0.0127)	(0.0145)		(0.0135)	(0.0148)
Log Household Income		-0.0153	-0.0021		0.0320**	0.0413***
		(0.0138)	(0.0137)		(0.0162)	(0.0150)
Social Participation		0.0311***	0.0333**		0.119***	0.120***
		(0.0137)	(0.0131)		(0.0216)	(0.0144)
Separated		-0.0238*	-0.0252*		0.0147	0.0147
		(0.0138)	(0.0138)		(0.0152)	(0.0123)
Widowed		-0.0370**	-0.0400***		-0.0252*	-0.0100
		(0.0152)	(0.0151)		(0.0153)	(0.0131)
Never Married		-0.0104	-0.0058		-0.0208	-0.0207*
		(0.0133)	(0.0134)		(0.0134)	(0.0119)
Unemployed		-0.0377**	-0.0393**		-0.0036	0.0022
		(0.0160)	(0.0162)		(0.0149)	(0.0143)
Retired		-0.0051	0.0044		-0.0070	-0.0068
		(0.0138)	(0.0137)		(0.0161)	(0.0159)
Mental Health		0.432***	0.436***		0.418***	0.421***
		(0.0196)	(0.0196)		(0.0144)	(0.0145)
Physical Health		0.0591***	0.0567***		0.0139	0.0173
		(0.0155)	(0.0155)		(0.0144)	(0.0152)
Female	-0.0687**	0.0153	0.0176	0.110**	0.217***	0.220***
	(0.0284)	(0.260)	(0.0266)	(0.0281)	(0.0375)	(0.0261)
Observations	5070	5070	5070	5070	5070	5070

Standard errors in parentheses, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix E: 2004 Happiness Regressions

Table E1: The Relationship between Distal/Proximal Covariates and 2004 Happiness

	(1) Happiness	(2) Happiness	(3) Happiness
Distal Covariates			
IQ Score	0.00737		-0.0547***
	(0.0185)		(0.0179)
Number of Siblings	0.00613		-0.00104
	(0.0300)		(0.0253)
Log Parental Income	-0.00290		-0.0115
	(0.0204)		(0.0185)
Single Parent Household	-0.0260		-0.0225
	(0.0214)		(0.0197)
Parental Education	0.0254		0.00522
	(0.0201)		(0.0187)
Age of Mother at Birth	0.0458*		0.0168
	(0.0252)		(0.0223)
Birth Order	-0.0326		-0.0141
	(0.0331)		(0.0306)
Proximal Covariates			
Years of Schooling		0.000571	0.0194
		(0.0171)	(0.0190)
Log Household Income		0.0208	0.0294*
		(0.0173)	(0.0175)
Unemployed		-0.0634**	-0.0638**
		(0.0264)	(0.0263)
Retired		-0.00289	-0.00247
		(0.0170)	(0.0171)
Never Married		-0.0253	-0.0251
		(0.0194)	(0.0194)
Widowed		-0.0570**	-0.0570**
		(0.0236)	(0.0237)
Separated		-0.0146	-0.0131
		(0.0178)	(0.0178)
Social Participation		0.0203	0.0187
		(0.0173)	(0.0174)
Mental Health		0.378***	0.382***
		(0.0296)	(0.0296)
Physical Health		0.0551**	0.0542**
		(0.0250)	(0.0250)
Female	-0.0406	0.0604*	0.0692*
	(0.0379)	(0.0359)	(0.0366)
Observations	2898	2898	2898
Adjusted R^2	0.000	0.178	0.179

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix F: Distal & Proximal Covariate Correlation

Table F1: Correlation Coefficient Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Happiness	1.000																			
2. Eudaimonia	0.220	1.000																		
3. IQ Score	0.042	0.117	1.000																	
4. Number of Siblings	-0.028	-0.034	-0.143	1.000																
5. Log Parental Income	0.027	0.093	0.174	-0.197	1.000															
6. Single Parent Household	0.017	0.008	-0.045	0.048	-0.172	1.000														
7. Parental Education	0.069	0.096	0.267	-0.229	0.333	0.032	1.000													
8. Birth Order	-0.018	-0.033	-0.137	0.658	-0.253	0.094	-0.287	1.000												
9. Age of Mother (birth)	0.019	0.022	0.062	0.070	-0.106	0.011	-0.068	0.502	1.000											
10. Years of Schooling	0.075	0.139	0.435	-0.173	0.240	-0.039	0.355	-0.138	0.081	1.000										
11. Log Household Income	0.037	0.082	0.187	-0.048	0.105	-0.006	0.116	-0.025	0.046	0.258	1.000									
12. Unemployed	-0.070	-0.016	0.021	-0.022	0.026	0.007	0.006	-0.023	-0.010	0.000	-0.047	1.000								
13. Retired	-0.010	-0.028	-0.034	0.010	-0.009	0.017	-0.019	0.026	-0.006	-0.060	-0.142	-0.331	1.000							
14. Never Married	-0.013	-0.020	0.014	0.001	0.016	0.011	-0.002	0.017	0.047	0.091	0.003	-0.024	0.008	1.000						
15. Separated	-0.025	0.017	0.007	-0.017	0.016	-0.001	0.024	-0.025	-0.024	-0.004	-0.011	0.021	-0.032	-0.065	1.000					
16. Widowed	-0.073	-0.035	-0.070	0.012	-0.022	0.010	-0.038	0.015	-0.005	-0.107	-0.037	0.017	0.021	-0.073	-0.139	1.000				
17. Social Participation	0.079	0.273	0.120	-0.022	0.055	-0.026	0.086	-0.040	0.039	0.159	0.086	-0.010	-0.056	-0.003	-0.038	-0.027	1.000			
18. Mental Health	0.437	0.199	0.119	-0.019	0.029	0.022	0.064	-0.008	0.039	0.114	0.090	-0.049	-0.023	-0.024	-0.036	-0.072	0.043	1.000		
19. Physical Health	0.152	0.078	0.027	-0.009	0.011	-0.031	0.044	-0.020	0.014	0.077	0.094	-0.057	-0.017	-0.004	-0.052	-0.015	0.058	0.182	1.000	
20. Female	-0.032	0.050	-0.012	0.022	-0.001	0.017	-0.039	0.019	0.033	-0.183	-0.152	0.018	0.087	-0.010	0.072	0.210	0.007	-0.059	-0.049	1.000

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The Centre for Economic Performance Publications Unit
Tel: +44 (0)20 7955 7673 Email info@cep.lse.ac.uk
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