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Happiness at Different Ages:
The Social Context Matters

John F. Helliwell
University of British Columbia

Haifang Huang
University of Alberta

Max B. Norton
University of British Columbia

Shun Wang
KDI School of Public Policy and Management

KDI 국제정책대학원
KDI School of Public Policy and Management

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ABSTRACT

This paper uses a variety of individual-level survey data from several countries to test for interactions between subjective well-being at different ages and variables measuring the nature and quality of the social context at work, at home, and in the community. While earlier studies have found important age patterns (often U-shaped) and social context effects, these two sets of variables have generally been treated as mutually independent. We test for and find several large and highly significant interactions. Results are presented for life evaluations and (in some surveys) for happiness yesterday, in models with and without other control variables. The U-shape in age is found to be significantly flatter, and well-being in the middle of the age range higher, for those who are in workplaces with partner-like superiors, for those living as couples, and for those who have lived for longer in their communities. A strong sense of community belonging is associated with greater life satisfaction at all ages, but especially so at ages 60 and above, in some samples deepening the U-shape in age by increasing the size of the life satisfaction gains following the mid-life low.

Introduction

A variety of research has shown that life satisfaction in many countries shows a U-shape over the life course, with a low point about the age of 50.[1] But there is a lot a variability too, with some countries showing little or no tendency to rise after middle age,[2] while elsewhere there is evidence of an S-shape, with the growing life evaluations after middle age declining again in the late 70s.[3] The existence and size of these trends depend on whether they are measured with or without excluding the effects of physical health, which by both clinical and subjective measures[4] declines steadily over the life course. Rises in average life evaluations after middle age are seen in some countries even without excluding the increasing negative effects due to health status, which gradually worsens with age. Because the U-shape in age is quite prevalent, some researchers have thought that it might represent something beyond the scope of human life experiences, since it has been found in a similar form among great apes.[5] Studies using longitudinal panels have sometimes failed to produce significant U-shapes.[6]

This paper builds upon two of Richard Easterlin's important contributions: his early emphasis on the social determinants of happiness, and his later analysis of well-being over the life course. In his life-course analysis he made two primary contributions.[7] First, he broke new ground in using synthetic panels constructed from repeated cross-sections to separate life-course and cohort effects.[8] He was able to show, as recently confirmed by Clark (2018) using panel data with individual fixed effects, that the age pattern of life satisfaction is not primarily due to cohort effects. Second, he compared life-course patterns for several different measures of domain satisfaction, and found different shapes for each. He then concluded that the time-shape of life satisfaction was likely to represent the net impact of what was going on in different aspects of peoples' lives.

Easterlin found, using data from the US General Social Survey, that life satisfaction had a hump shape in age, with a peak where many other studies have found a trough. Subsequent research has shown his GSS data and results to differ from most other surveys for the United States and for most industrial countries, as surveyed and extended

most recently by Blanchflower and Oswald (2018), almost all of which show U-shapes in age with or without adjusting for a variety of control variables. While we also find, using several different data sources, a U-shape in life satisfaction in many but not all countries, we agree with and implement Easterlin's suggestion that the U-shape, or any other given shape, is not inevitable, but instead reflects the evolution of important aspects of each person's life.[9]

We pay special attention in this paper to social conditions in the workplace, the home, and the community. In all three cases, we expect to find that life satisfaction is higher in those age ranges where the relevant social context is more important and/or more supportive. Although our analysis is mainly across individuals living in the same country, we would expect to find that cross-national differences in the quality of the institutions providing social support might also help determine cross-national differences in the U-shape in age. That must remain a topic for future research.

Our particular hypothesis is that various aspects of each individual's social context help to explain their life satisfaction at different ages. We initially test this by simply comparing average happiness values at different ages for respondents in different subgroups where we expect to see possible differences. There are two reasons for starting with this simple approach. First, it avoids debates[10] about whether the specific choice of control variables affects the conclusions about the U-shape without explaining why. Second, Blanchflower and Oswald (2018) and Stone et al (2010) show that the usual sets of control variables neither create nor eliminate the prevalence of a U-shape in their data samples. However, to increase the robustness of our findings, and because our social variables are likely to be correlated with some of the standard control variables, we undertake the main body of our analysis using otherwise comparable econometric specifications with and without control variables. Our methods are exactly the same as those of Blanchflower and Oswald (2018) and Stone et al (2010) with one critical difference. Their analysis treats each of the variables as independent, while we hypothesize that some key social relationships might in fact interact with age.

If we are right to suppose that the age patterns found for subjective well-being are often reflections of a changing pattern of social relationships, then they are likely to appear in some places and not in others, and for some people but not others, depending on the social circumstances in which they live. As the empirical science of well-being has developed, and as the available data become richer, it is becoming natural to consider not just the possible separate effects of, e.g., age, marriage, employment, income, and the social context, but also to consider the nature of their interactions. The primary contribution of this paper is to test for interactions that are usually left untested. Most previous analyses of these data have presumed linear independence, with the exceptions of a log-linear form for income and a non-linear form for age itself. Age is sometimes modeled by age groups but more usually by a quadratic form including both age and age-squared, with an expected negative sign on age and a positive sign on age-squared, as would be implied by a U-shape in age. We prefer the greater generality provided by the use of population age groups, thus permitting us to see at which particular ages the social context effects are most evident. In the following sections we consider interactions between age and specific measures of the social context on the job, at home, and in the community, in all cases using measures of the social context that have been found previously to have positive effects on life evaluations. By including interaction terms, we extend these previous results to show that these effects vary by age group, with the better social context having its largest effects in the middle age groups, thereby lessening the U-shape in age. We also do parallel analysis using an affective measure relating to each respondent's feelings of happiness on the previous day in those cases where our data sources permit it.

Assessing the U-shape consequences of the workplace social context

Our general hypothesis is that the social context is a first-order determinant of subjective well-being to an extent that varies with the age of the respondent. For instance, in this section, we hypothesize that workplace social quality is more important for subjective well-being in mid-life than elsewhere, since mid-life years are for many people a time of stress created by competing demands from their work and family lives, and since these

pressures are more easily reconciled when the workplace environment is more congenial and supportive.[11] Our primary data for testing this hypothesis come from large samples of employed respondents to the Gallup-Healthways Daily Poll, comparing those who regard their immediate work superior as a partner with those who instead think of their supervisor as a boss. Figure 1 shows the average ladder scores for the two groups of respondents. Those who regard their supervisor as a partner have at all ages life evaluations that are significantly higher than for those with boss-like superiors. The vertical lines show the 95% confidence intervals for the estimates of the subgroup means. The tightness of these intervals reflects the fact that the samples are very large in both cases, while the big vertical distance between the two lines shows dramatically different life evaluations for the two groups of US workers. In the middle of the age range, from ages 43-47, the difference favours those with partner-like supervisors by just over 0.4 points on the 0 to 10 scale used for the Cantril ladder. This is a very large difference, equivalent in life satisfaction terms to more than a doubling of household income. The fact that the confidence regions are larger for those who select the 'boss' alternative shows that in the large US samples there are more partners than bosses in US workplaces, by about a two to one margin.

The most important feature of Figure 1, for our current purposes, is that those with partner-like bosses show no significant drop in life evaluations between the late 20s and the early 50s, while for those with boss-like supervisors there is a large drop, about 0.2 points on the 0 to 10 scale. Both groups of workers show similarly large gains in life evaluations from mid-50s to age 70. Thus there is a significant U-shape for those with bosses, while for those in partner-like settings there is no mid-life dip.

**Figure 1: Cantril ladder for US employees of different ages with
different types of supervisor
(US Gallup-Healthways Daily Poll)**
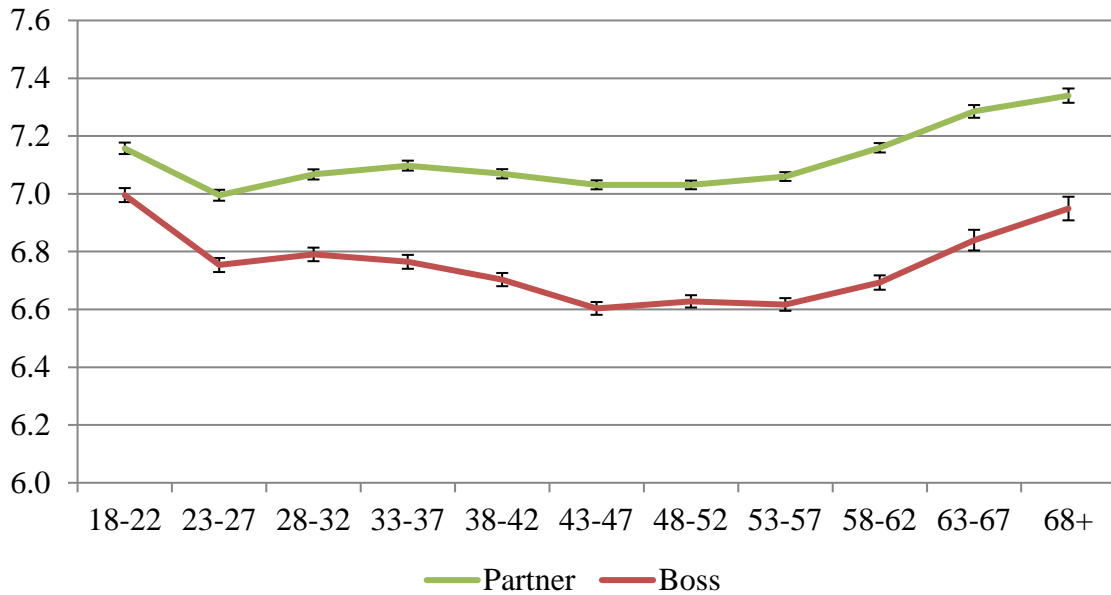
Figure 2 shows parallel results from a question asking workers about their happiness

yesterday, a measure of positive affect answered in this case on a binary scale. The figure

shows the proportion of the sampled populations who described themselves as being

frequently happy on the previous day. In proportionate terms, the differences between the

boss and partner groups are roughly of the same size for positive affect as for life

evaluations, but the time pattern is different in two important ways.[12] First, it can be seen

by comparing Figures 1 and 2 that the happiness drops for those with boss-like

supervisors are larger and longer lasting than they are for life evaluations. There is

essentially no fall in happiness for those with partner-like supervisors. For those with

boss-like supervisors, however, the proportion reporting happiness yesterday drops from

0.90 at age 27 to just over 0.84 in the 53-57 age range.[13]

Figure 2: Happiness (yesterday) for US employees of different ages with different types of supervisor (US Gallup-Healthways Daily Poll)
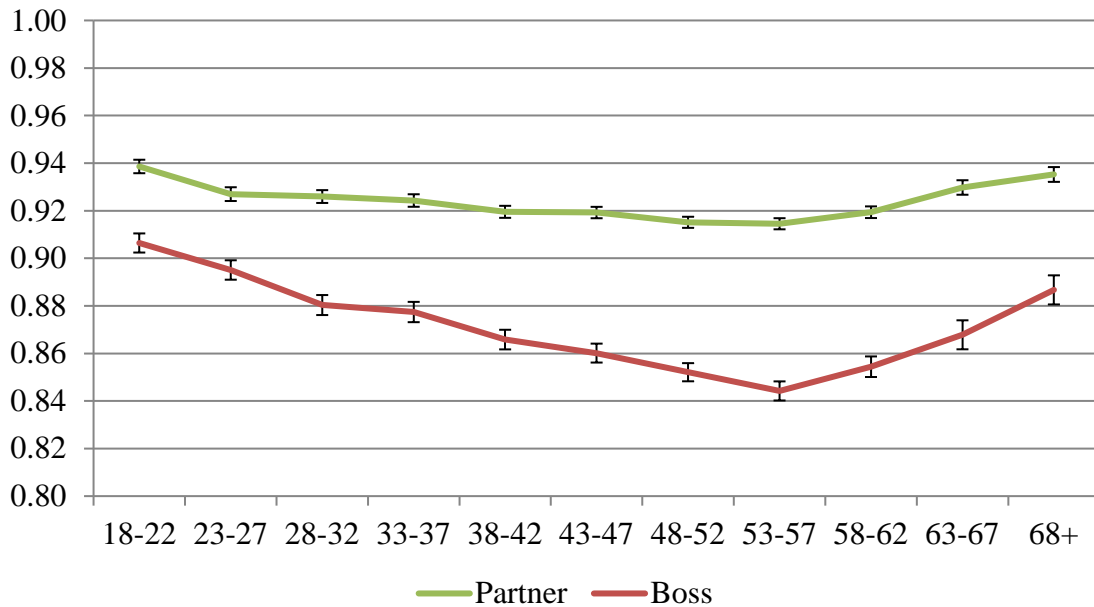

The second difference relates to weekend effects. We can separate the responses to the life evaluations and positive affect questions according to the day the survey was taken. We divide the responses into two groups, split according to whether or not the preceding day was a regular workday or not.[14] We do not know the work schedules for individual respondents, so our sample split is instead based on the fact that Mondays to Fridays are more frequent workdays than are Saturdays and Sundays. Figure 3 shows that there are no weekend effects for life evaluations. Regardless of the day on which the question is asked, respondents with boss-like supervisors have lower life evaluations than respondents those with partner-like supervisors, while within each respondent group, no significant change occurs between weekdays and weekends. This lack of change is reassuring evidence of the validity of life evaluations, which are intended to relate to life as a whole, and not to a particular day. But our data also provide assurance against another possible source of skepticism: that happier people will think better of everyone, so that their partner/boss responses reflect their personalities rather than their workplaces. The answers for the question about happiness yesterday eliminate the grounds for such a possibility, because they show, as can be seen in Figure 4, very pronounced weekend effects that are much larger for those with boss-like supervisors. If the workplace

environment, rather than personality differences, is the underlying cause of the different answers, then we should expect to see the relief at being off work being much greater for those in less congenial workplaces. And that is indeed what we find.

Figure 3: Cantril ladder on weekends and weekdays for different type of supervisor in the United States (US Gallup-Healthways Daily Poll)
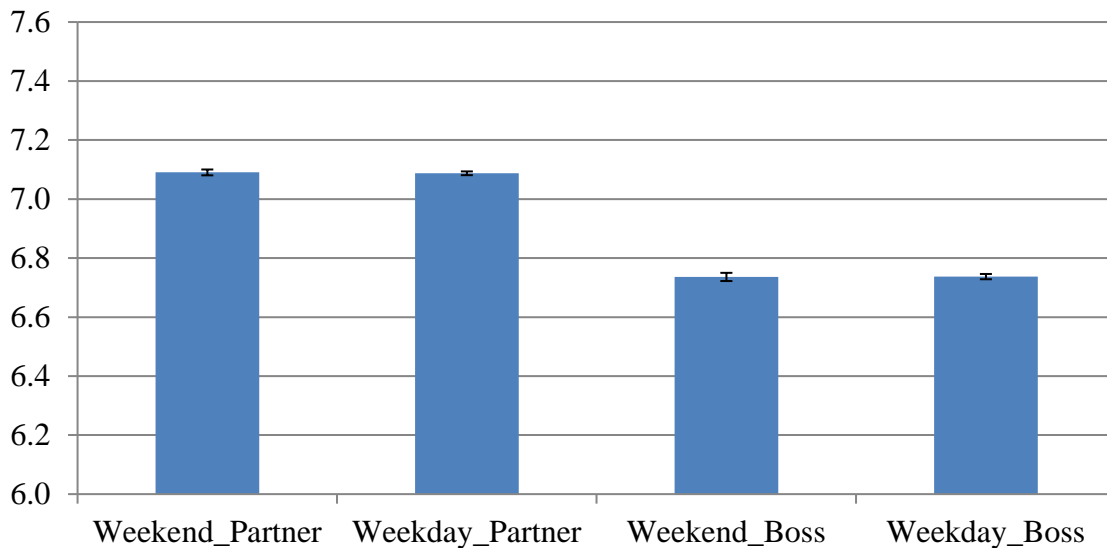
Figure 4: Happiness (yesterday) on weekends and weekdays for different type of supervisor in the United States (US Gallup-Healthways Daily Poll)
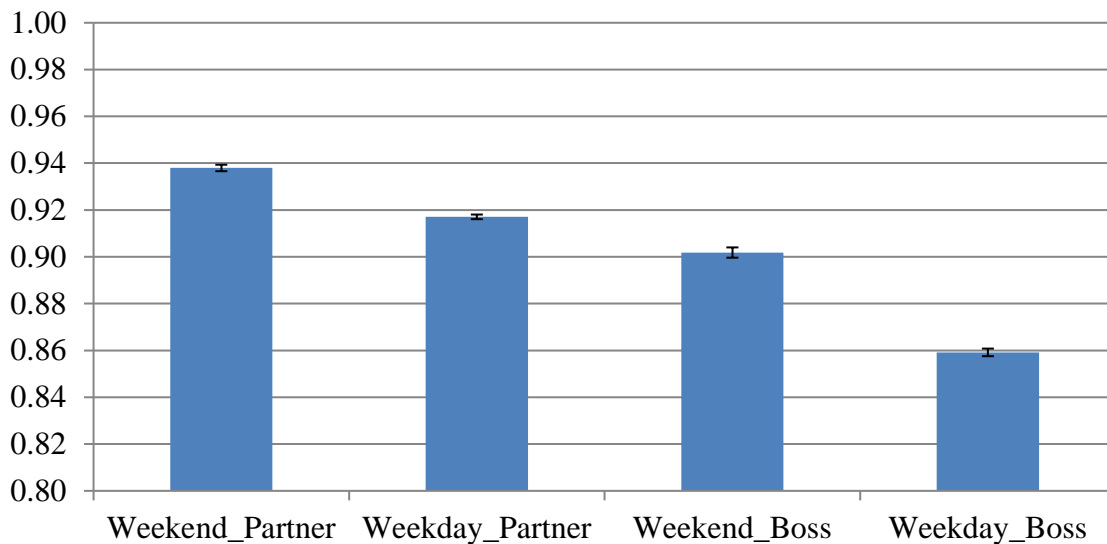
If the U-shape in age is largely a consequence of the social contexts of different aspects and times of life, then we might also expect to find differences across nations and

cultures, and possibly over time as well. That is indeed the case, as shown by Figure 5 showing population-weighted U-shapes for each of nine major global regions. While every region shows at least some drop from the young to middle ages, only two regions have well defined recoveries after middle age, and there are also considerable differences in the steepness of the drop from youth to middle age. Finding a role for the workplace social context in explaining these differences is complicated by the fact that the boss-partner question has only been asked in some countries of the Gallup World Poll, and the samples are in any event far smaller than available from the Gallup-Healthways Daily Poll. If we combine the responses from employed workers in those countries in which the boss-partner question has been asked more than 100 and up to about 1,000 times, we get a sample of 38,000 from 114 countries including some representation in all regions.[15]

Figure 5: Cantril Ladder by Gender in 9 World Regions

(Gallup World Poll)

| MENA | S. Asia | SSA |

Male — — — Female
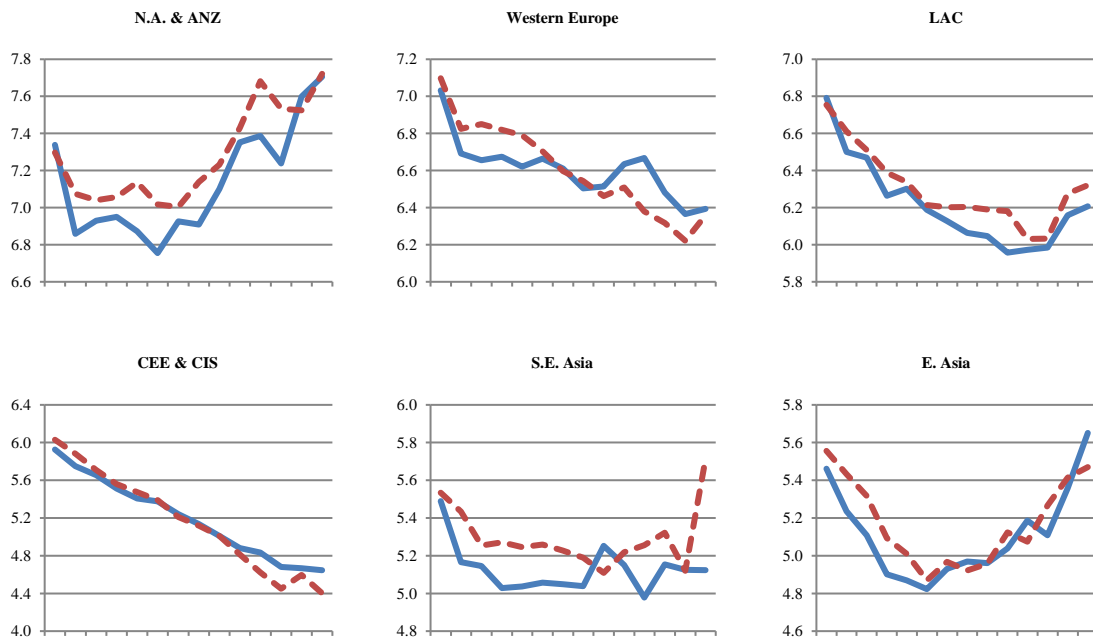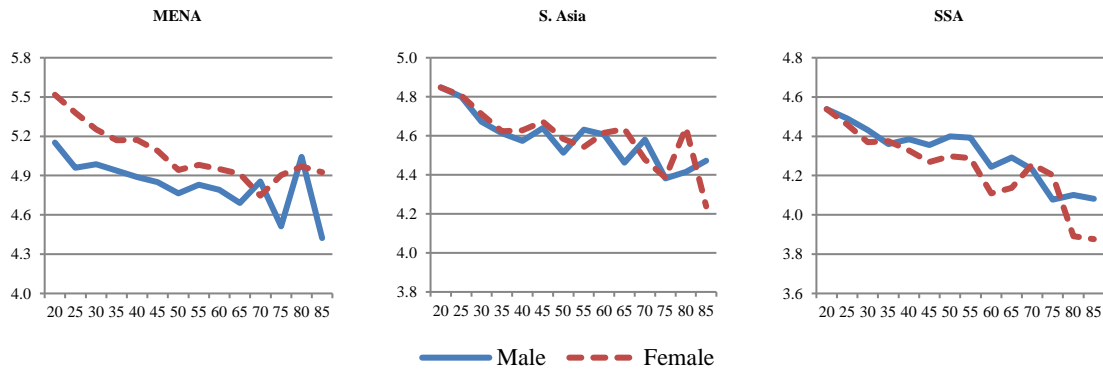
Figure 6 divides the employed respondents by boss vs partner and into younger (<45), middle-aged (45 to 55) and older (>55) workers. Everywhere and at all ages, respondents with partner-type bosses have systematically higher life evaluations. Although there is no universal evidence of a U-shape linking the different age groups, the central element of our buffering hypothesis is supported by these international data – where midlife evaluations are compared to those of younger workers in similar job situation, the midlife evaluations fall less for those in partner-type job environments.

Figure 6
Cantril ladder for different type of supervisor in 114 countries
(Gallup World Poll)
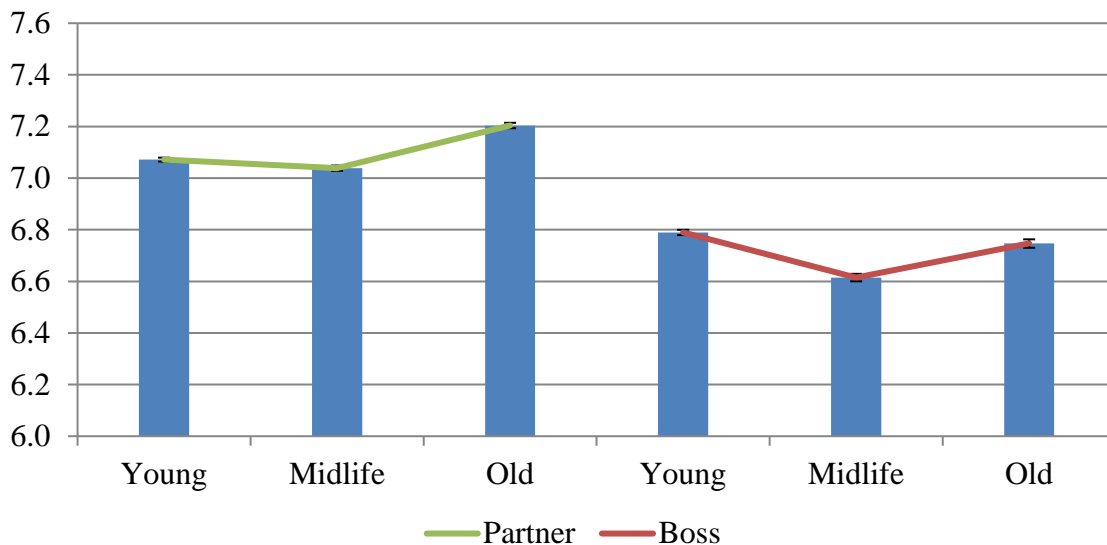
Partner — Boss

The results above are obtained simply by dividing the data samples for each age group according to whether they have partner-like or boss-like supervisors. We now need to ensure that our results still hold when due account is taken of all of the other variables often used to explain individual-level subjective well-being. This is advisable because many of these other variables may be correlated with answers to the partner/boss question, with estimates of the latter effect being falsely high or low, depending on the nature of the correlations. Our econometric analysis is conducted by estimating two different models in the US Gallup-Healthways Daily Poll, which has a much bigger usable sample than the international Gallup World Poll. The first model explains well-being using age categories, a dummy variable for a partner-like supervisor, a full set of interaction terms between the partner variable and the age groups, plus dummy variables to capture state and year fixed effects. The second model adds a number of individual-level control variables.

More specifically, the base model for the working environment, estimated using data for employees only, is:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Partner_{ijt}\boldsymbol{\beta_2} + \gamma_1 Partner_{ijt} + \mu_t + \rho_j + \varepsilon_{ijt},$$

where SWB_{ijt} indicates a subjective well-being measure of individual i in state j in year of survey t, $Agec_{ijt}$ is a vector of age groups (omitting the 18-22 base age group), $Partner_{ijt}$ is a dummy variable for supervisor being more like a partner than a boss, μ_t is a year fixed effect, ρ_j a state fixed effect, and ε_{ijt} is the error term.

The corresponding model with controls added is:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Partner_{ijt}\boldsymbol{\beta_2} + \gamma_1 Partner_{ijt} + X_{ijt}\theta + \mu_t + \rho_j + \varepsilon_{ijt}.$$

where X_{ijt} is a vector of individual and household covariates, including gender, marital status, number of children, four levels of education (vs less than high-school completion),

log of household income (with a dummy variable for those with income not reported), and full-time employment status (vs part-time).

The full results of the estimation are available in the statistical appendix, along with more detailed descriptions of the variables. The key results for this section of the paper relate to the coefficients for having a work supervisor regarded by the respondent as a partner rather than a boss. This is the case for about two-thirds of the employed US respondents to the Gallup-Healthways daily poll. In the base group, aged 18-22, having a partner-like supervisor is associated with a Cantril ladder score that is 0.166 points (t=11.1) higher on the 0 to 10 scale. As shown in Figure 7a, this difference grows until middle age, and then declines, delivering a U-shape in age that is more pronounced for those with less congenial working environments. The red line in Figure 7a shows the sum of the estimated β_1 and β_2 for each of the age group other than the omitted group (age 18-22). The blue line shows the estimated β_1. Thus the vertical gap between the two lines illustrates the magnitude of the estimated β_2 for each of the age groups. A wider gap indicates a greater positive impact on well-being of having a partner-like superior. We use an identical or similar thematic design for all of our subsequent figures.

How well do these results hold up when we include the usual set of individual-level control variables? Our second model is essentially a conventional estimation for an individual-level subjective well-being equation, except that we add interaction terms for age and job quality. In most happiness equations, such interactions are assumed to be zero. Our alternative hypothesis is that the coefficients on the interaction variables will be significantly positive, with the departures from linearity being greatest in middle age. Figures 7b plots the U-shape results with control variables. For the youngest age group, the effect of having a partner-like supervisor is essentially unchanged, 0.162 (t=10.8). For higher age groups, at least up to middle age, the effects are significantly greater, but by a smaller multiple than in the simpler model. Thus for those in the 43-47 age group the effects of having a partner-like supervisor are 0.143 points (t=7.1) greater than for the youngest age group. Both the size and significance of the U-shape remains very large, even if smaller in magnitude than that in the simpler model. In the simple model, the effects of having a partner-like supervisor are 140% larger for the typical respondent in

the 43-47 year category than for those aged 18-22. In the model with controls, the partner-like supervisor is associated with a life evaluation premium that is 88% larger for the 43-47 age group than for those aged 18-22. Hence we reject the null hypothesis that that partner premium does not vary with age.

Figure 7a: Ladder difference between each age group and the youngest age group (18-22) , partner vs boss, in the model without controls
(US Gallup-Healthways Daily Poll)
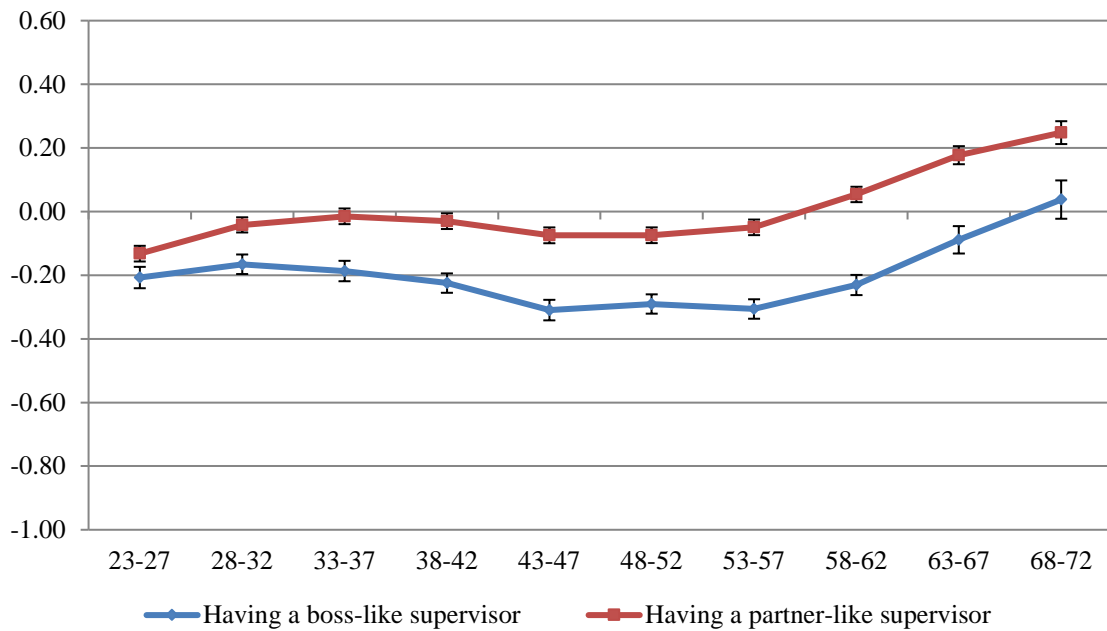
Figure 7b: Ladder difference between each age group and the youngest age group (18-22), partner vs boss, in the model with controls (US Gallup-Healthways Daily Poll)
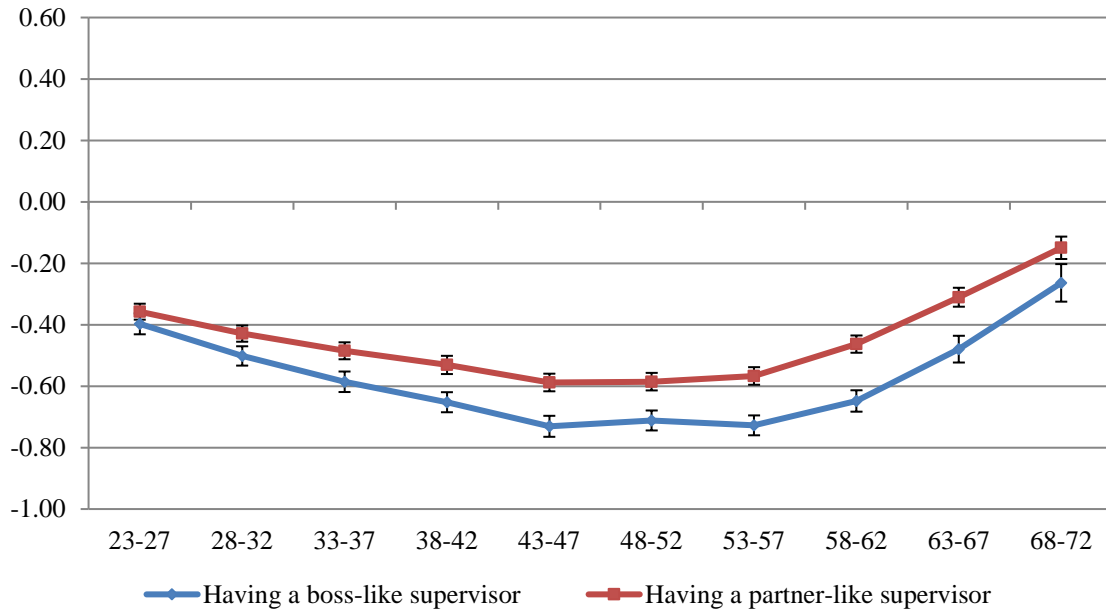
This analysis is repeated for happiness yesterday in Figures 8a and 8b. With or without the inclusion of control variables, the maximum positive interaction effects appear at a later age, 53-57 for happiness yesterday compared to 43-47 for the Cantril ladder. The happiness-yesterday effect of a partner-like supervisor is 0.023 in the simple model and 0.057 with controls (t=10 in both cases). In proportionate terms, this is larger than for the life evaluations, although such comparisons are difficult to make, since the individual answers to the life evaluation question are on a 11-point response scale running from 0 to 10, while the happiness yesterday question offer only a binary yes/no response possibility. The age-group interaction effects are proportionately roughly the same for happiness as for life evaluations, except for the different age pattern already noted.

Figure 8a: Happiness (yesterday) difference between each age group and the youngest age group (18-22), partner vs boss, in the model without controls (US Gallup-Healthways Daily Poll)

Figure 8b: Happiness (yesterday) difference between each age group and the youngest age group (18-22), partner vs boss, in the model with controls (US Gallup-Healthways Daily Poll)
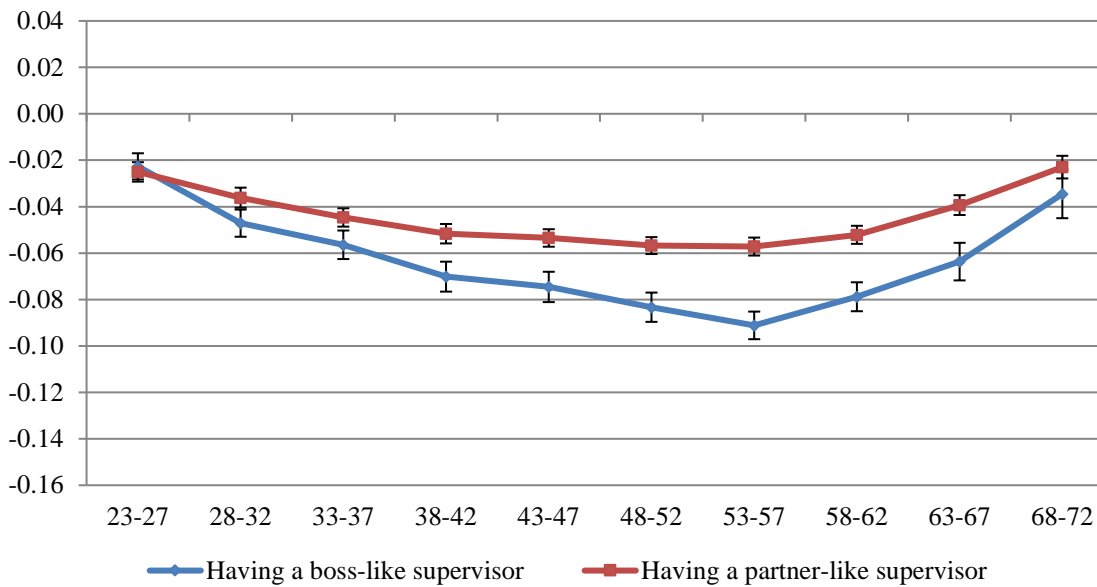
The U-shape is flatter for those who are married

We turn now to consider the U-shape effects of marriage, both with and without control variables. We hypothesize the U-shape in age is significantly less for those who are married tha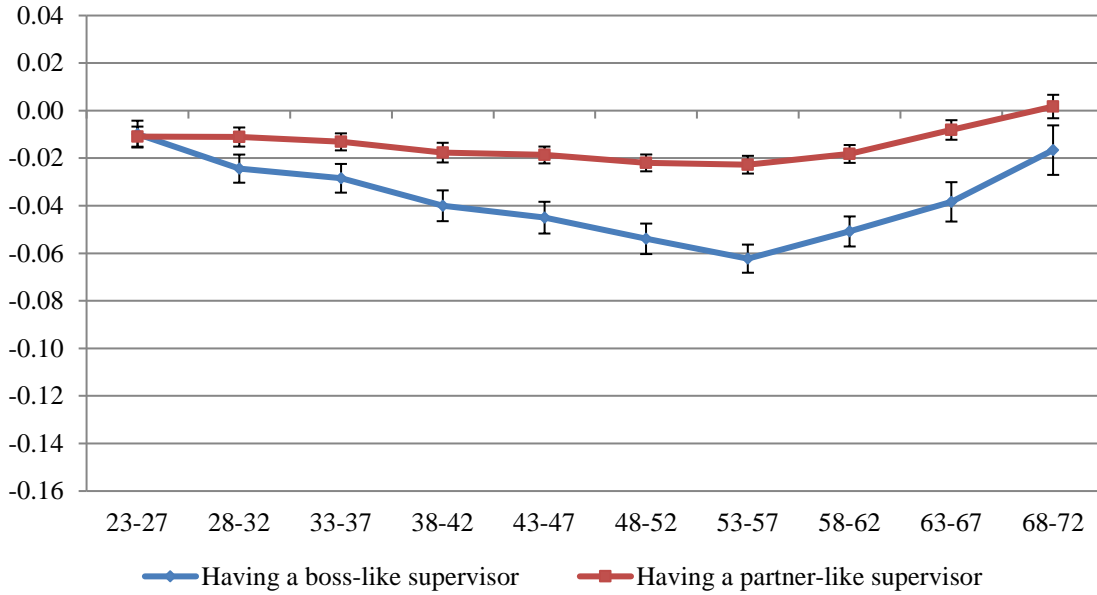n those who are not[16]. This supposes that together spouses can better shoulder the extra demands that may exist in mid-life when career and other demands coincide. This was found in earlier studies of adaptation to marriage, which showed that although it was true in longitudinal data sets from several countries[17] that those who married often return to their baseline life evaluations after a few years, they were nonetheless significantly happier than their unmarried matched counterparts, whose happiness was following a steady decline. Thus marriage provides a buffer against what otherwise would have been a U-shaped decline into middle age.

So we can conclude that, at least in some countries, a happy home life can flatten the U-shape, just as we have shown for happy workplaces. We do our main marriage analysis using US data for approximately 240,000 respondents to the Gallup-Healthways Daily Poll, more than twice the previous sample, which was restricted to paid employees.

The base model for marital status is:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Marr_{ijt} * \boldsymbol{\beta_2} + \gamma_1 Marr_{ijt} + \mu_t + \rho_j + \varepsilon_{ijt},$$

where SWB_{ijt} indicates subjective well-being measure, $Agec_{ijt}$ is a vector of age groups (omitting the base age group), $Marr_{ijt}$ is a dummy variable for marriage or common law, μ_t is year fixed effect, ρ_j is state fixed effect, and ε_{ijt} is the error term.

The model for marital status with controls:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Marr_{ijt}\boldsymbol{\beta_2} + \gamma_1 Marr_{ijt} + X_{ijt}\theta + \mu_t + \rho_j + \varepsilon_{ijt},$$

where X_{ijt} is a vector of individual and household covariates including employment status, gender, log of household income, level of education, and number of children.

The two parts of Figure 9 compare the life evaluation U-shapes for married and unmarried respondents. Whether or not control variables are included, the life evaluations

for the 18-22 age group are the same whether the respondents are married or not. Thereafter the coefficients on the interactive age variables (i.e. the vertical difference between the line for the married and the unmarried in Figure 9) show an increasing pattern, with a peak in the 53-57 age category, of 0.78 (t=31) in the simple model and 0.52 (t=23) in the model with controls. With or without controls, the U-shape is much shallower for the married than the unmarried, to an extent that is quantitatively large and statistically very significant.

Figure 9a: Ladder difference between each age group and the youngest age group (18-22), married vs not, in the model without controls
(US Gallup-Healthways Daily Poll)
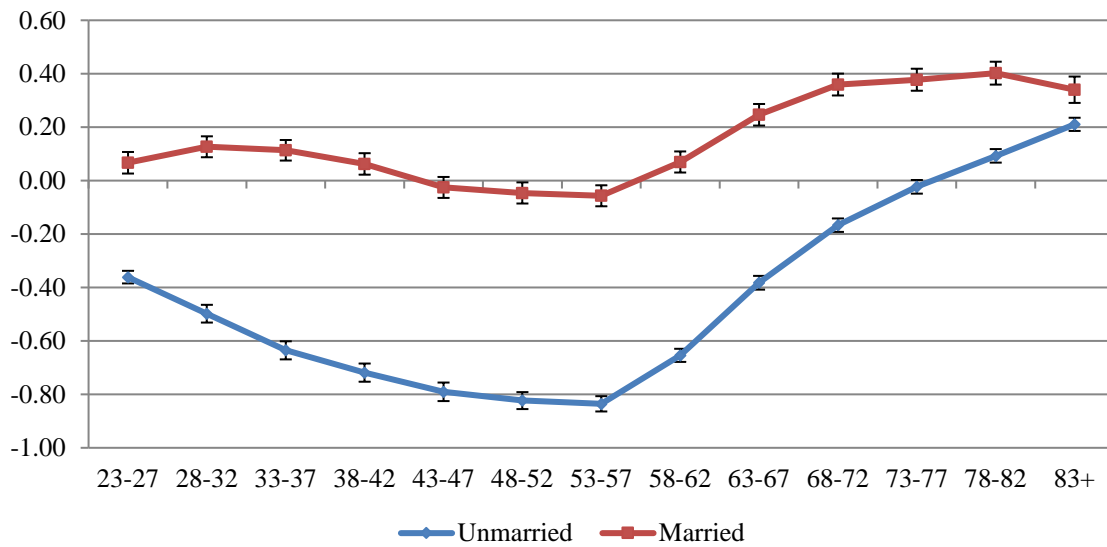
Figure 9b: Ladder difference between each age group and the youngest age group (18-22), married vs not, in the model with controls
**(US Gallup-Healthways Daily Poll)**
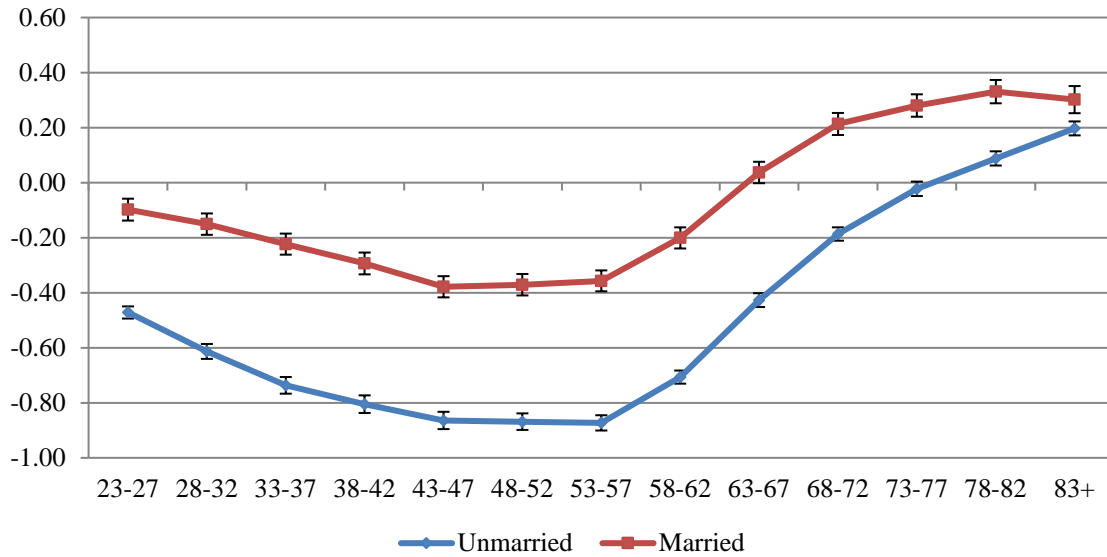
The two parts of Figure 10 show the corresponding results for answers to the happiness yesterday question. The reduction in the depth of the U-shape is very large and significant in both cases. The coefficients on the age-marriage interaction terms in the 53-57 age group are +0.110 (t=28) without controls and +0.085 (t=28) with controls.

Figure 10a: Happiness (yesterday) difference between each age group and the youngest age group (18-22), married vs not, in the model without controls (US Gallup-Healthways Daily Poll)
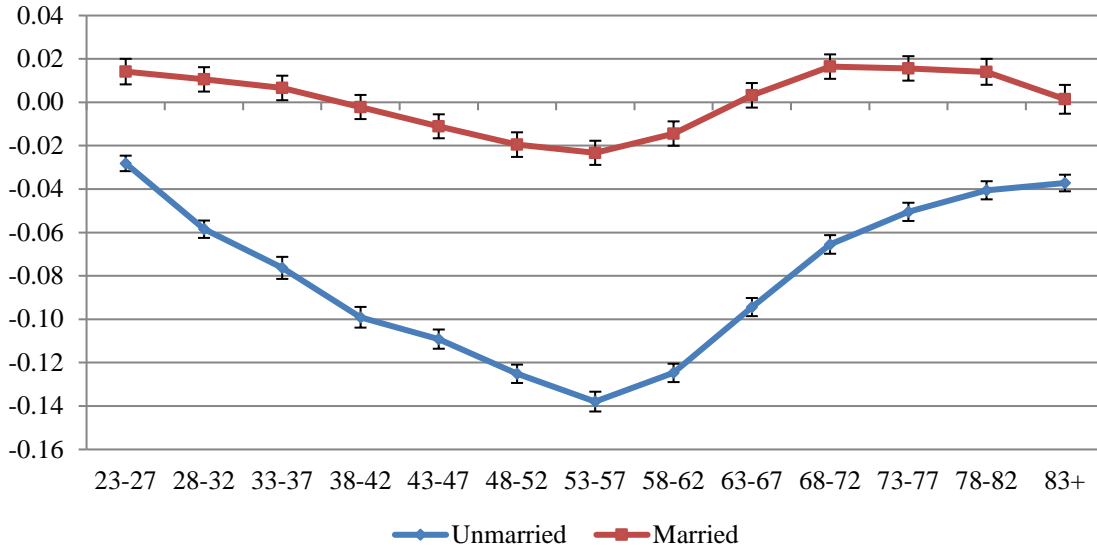
Figure 10b: Happiness (yesterday) difference between each age group and the youngest age group (18-22), married vs not, in the model with controls (US Gallup-Healthways Daily Poll)
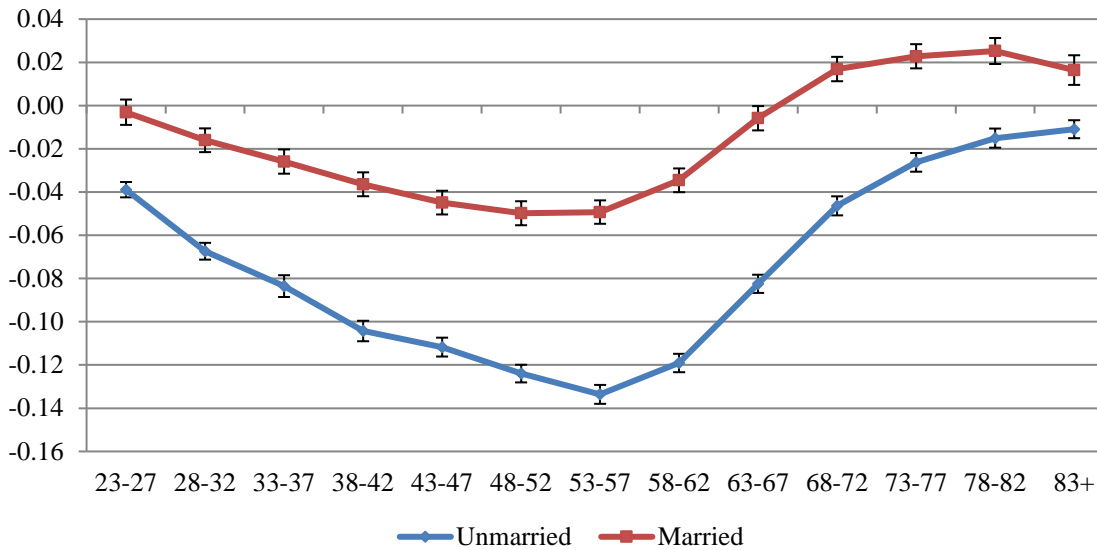
Previous research using UK longitudinal data has shown marriage to be associated with substantially higher life evaluations even when pre-marriage life satisfaction is taken into account (Grover and Helliwell 2017). Additionally, large samples of cross-sectional data from the UK's Annual Population Survey (APS) showed the U-shape in age to be much flatter for the married, even when the comparison is done between the ever-married and the never-married to remove the selection out of marriage by separation and divorce (Grover and Helliwell 2017, Figure 3). Because the UK APS asks about life satisfaction and about happiness yesterday, using identical 0 to 10 response scales, we can compare the U-shape consequences for life satisfaction and for happiness yesterday more consistently than is possible with the US data. We therefore repeated the analysis shown in Figures 9 and 10 using the UK data, as reported in the statistical appendix. With or without controls, the U-shape is much shallower for the married than the unmarried for both life satisfaction and happiness yesterday. The coefficient on the age-marriage interaction term for life satisfaction in the 48-52 age group, which is at the bottom of the U-shape, is 0.46 points higher (t=9.7) for the married than for the unmarried, with or without controls, relative to a comparison group comprising those aged 18-27. This is just slightly lower than was found in the model with controls applied to the US Gallup data in Figure 9. For happiness yesterday, on the same 0 to 10-point scale, the interaction coefficient is +0.35 points (t=6.2). Thus the U-shape effects of marriage in the UK data are somewhat greater for life satisfaction than for happiness yesterday, while being large and statistically significant in both cases.

Assessing the combined effects of the social context at work and at home

We now use the large data samples provided from the US Gallup Daily Poll to show the U-shape differences for two-way interactions between the social context of the working environment and marriage with and without the use of the fuller sets of controls frequently used in the explanation of subjective well-being. Once again, we do this using both the Cantril ladder and happiness yesterday as alternative measures of subjective well-being.

The base model for two-way interactions between working environment and marital status is:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Marr_{ijt}\boldsymbol{\beta_2} + Agec_{ijt}Partner_{ijt}\boldsymbol{\beta_3} + Agec_{ijt}Marr_{ijt}Partner_{ijt} * \boldsymbol{\beta_4} + \gamma_1 Marr_{ijt} + \gamma_2 Partner_{ijt} + \gamma_3 Marr_{ijt}Partner_{ijt} + \mu_t + \rho_j + \varepsilon_{ijt},$$

The model for two-way interactions between working environment and marital status with controls:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Marr_{ijt}\boldsymbol{\beta_2} + Agec_{ijt}Partner_{ijt}\boldsymbol{\beta_3} + Agec_{ijt}Marr_{ijt}Partner_{ijt} * \boldsymbol{\beta_4} + \gamma_1 Marr_{ijt} + \gamma_2 Partner_{ijt} + \gamma_3 Marr_{ijt}Partner_{ijt} + X_{ijt}\theta + \mu_t + \rho_j + \varepsilon_{ijt}.$$

The coefficient γ_3 estimates the interaction effects between marriage and the social context on the job for respondents in the 18-22 age group, while the coefficients $\boldsymbol{\beta_4}$ show the corresponding interaction effects for each age group. Almost universally, these interaction effects are small and statistically insignificant, for both life evaluations and happiness yesterday, and for equations with and without control variables. We nonetheless include these small effects in the calculations shown in Figures 11 and 12. The estimation sample is essentially the same as was used for the workplace equations, so that the marriage results are now those for employed workers, rather than the full population sample used for the earlier marriage results. By comparing the marriage effects in the two samples, we find that the U-shape effects of marriage are less for the sample of employed workers than they were previously found to be for the larger sample including the self-employed, the unemployed, and those not in the labour force. For the 53 to 57 age group, the marriage coefficient is about 10% smaller in the employed sample, while for happiness yesterday it is about 25% smaller. Thus, while the marriage premium appears to be independent of work quality, it is not independent of employment status in general.

Looking at the employed sample, we can compare the relative sizes of the marriage and workplace effects. These comparisons are not exact, of course, as the marriage effect is not showing the effects of marriage quality, but just whether the respondent is married or

not. Previous research[18] using UK data showed that the marriage effects were twice as large for those who also regarded their spouse as their best friend, a reasonable measure of the quality of a marriage in terms of happiness. For the social context of the job we are looking solely at job quality, but using only one measure among many possible. Previous research has shown a large life satisfaction premium for being employed rather than unemployed, in both cross-sectional and longitudinal data samples.

Figure 11a shows that the effects of marriage in reducing the size of the U-shape drop are twice as great as the corresponding benefits of having a partner-like supervisor. In the model with controls added, shown in Figure 11b, the U-shape attenuation is lessened in the work situation while the effects of marriage are unchanged, so that marriage is here three times as important as the workplace environment. What can we conclude about the combined effects of marriage and the workplace social context? In Figure 11b, we can see that employed workers aged 53-57 who are unmarried and have a boss-like supervisor have life evaluations that are lower by 0.82 points than those in the youngest age group with the same job and home characteristics. For those who are married and have partner-like supervisors, there is still some evidence of a U-shape, about 0.28 points, about one-third as large as for those who are unmarried and in jobs with boss-like supervisors.

Figure 11a: Ladder difference between each age group and the youngest age group (18-22), combined, in the model without controls

- Unmarried+Having a boss-like supervisor
- Unmarried+Having a partner-like supervisor
- Married+Having a boss-like supervisor
- Married+Having a partner-like supervisor
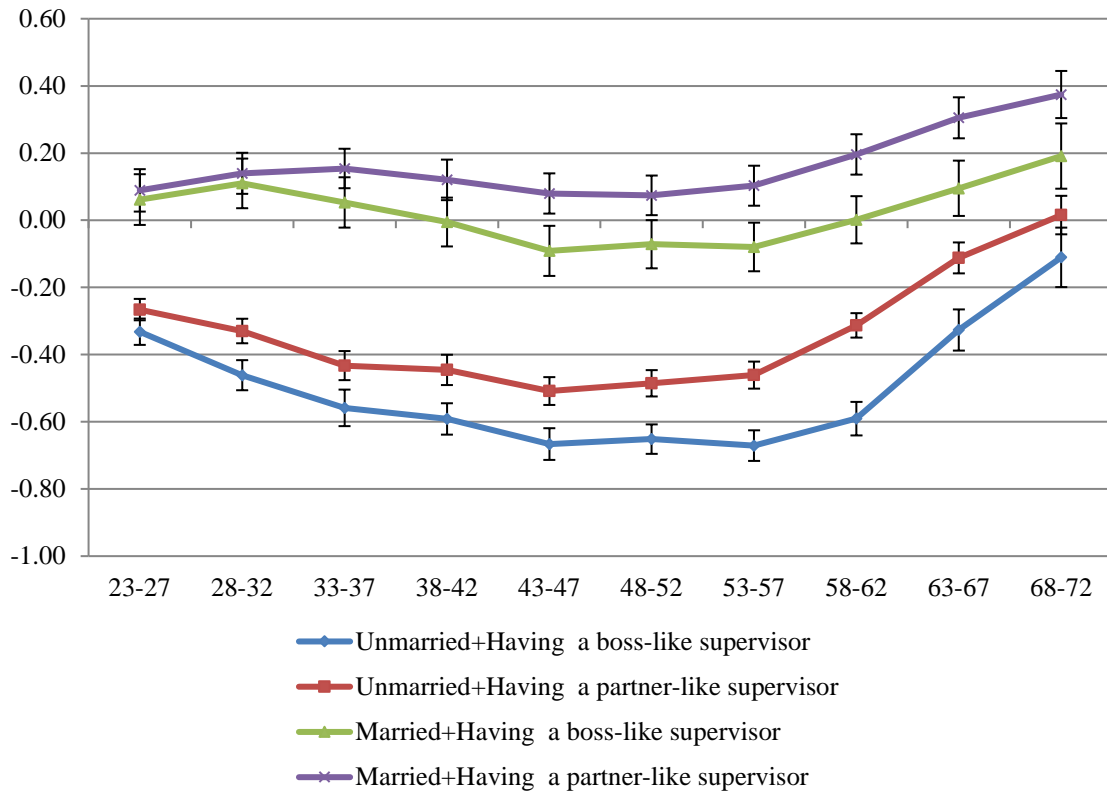
Figure 11b: Ladder difference between each age group and the youngest age group (18-22), combined, in the model with controls

Legend:
- Unmarried+Having a boss-like supervisor
- Unmarried+Having a partner-like supervisor
- Married+Having a boss-like supervisor
- Married+Having a partner-like supervisor
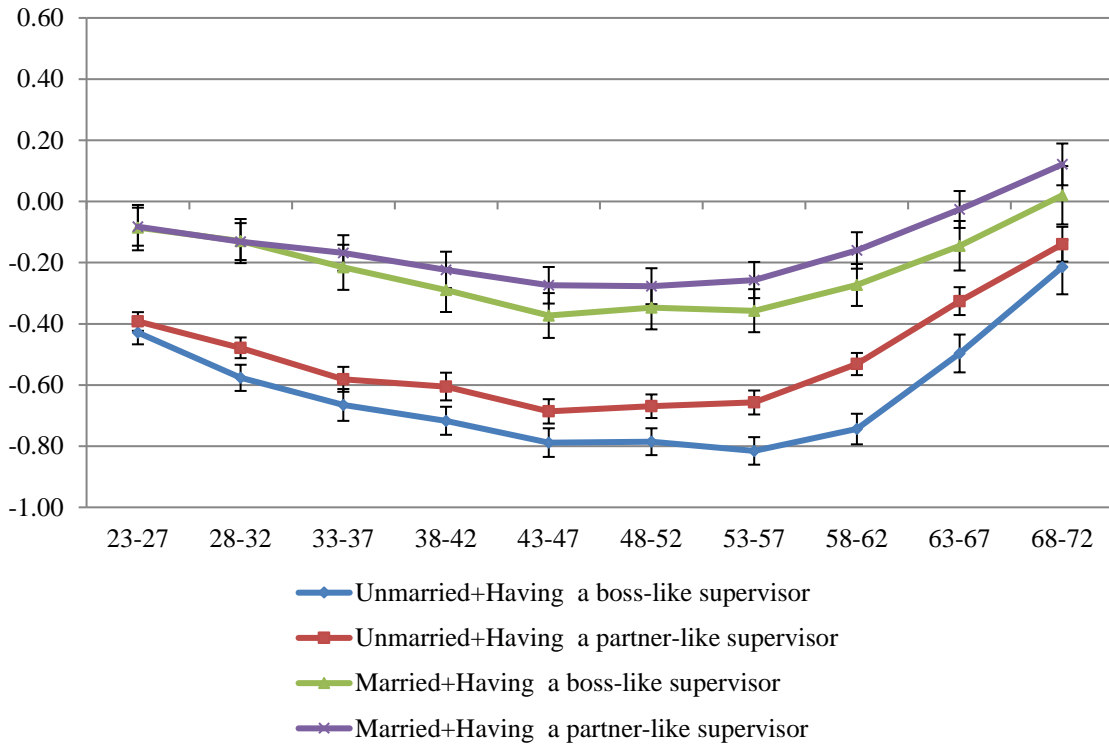
The results in Figure 12 for happiness yesterday have the same general pattern, while showing even larger proportionate reductions in the U-shape for those who are married and partner-like supervisors. Looking at the results with controls in Figure 12b, the U-shape for the married in good jobs is less than one sixth as large as for those who are unmarried and with boss-like supervisors. For those in the 53-57 age group, for example, the reported frequency of happiness yesterday is lower by 0.02 for the married in good jobs, compared to 0.11 for those who are unmarried and with boss-like supervisors.

Figure 12a: Happiness (yesterday) difference between each age group and the youngest age group (18-22), combined, in the model without controls (US Gallup-Healthways Daily Poll)

- Unmarried+Having a boss-like supervisor
- Unmarried+Having a partner-like supervisor
- Married+Having a boss-like supervisor
- Married+Having a partner-like supervisor
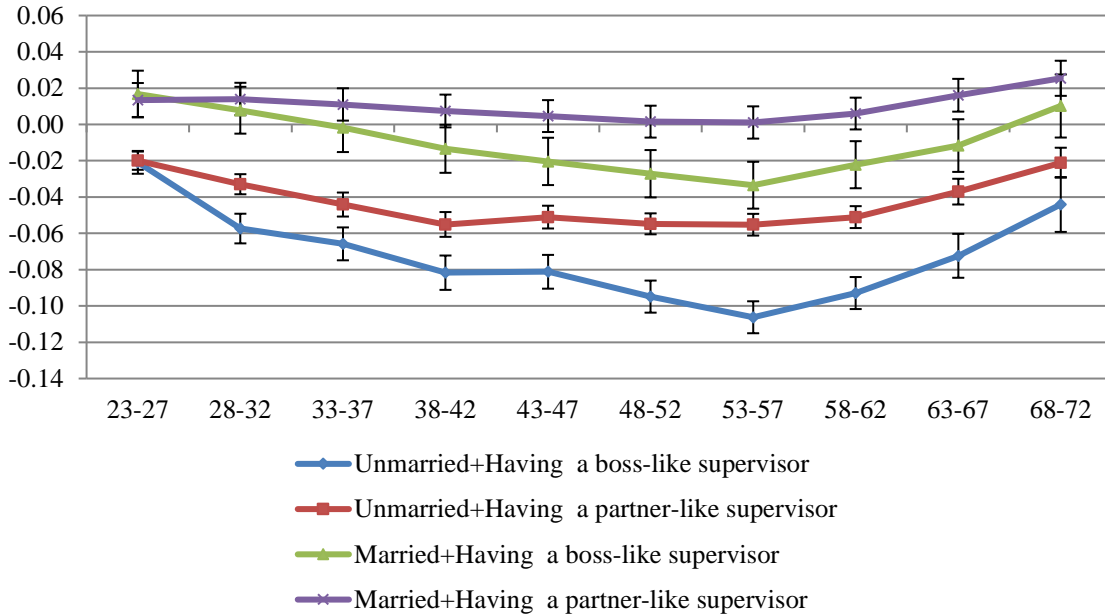
Figure 12b: Happiness (yesterday) difference between each age group and the youngest age group (18-22), combined, in the model with controls (US Gallup-Healthways Daily Poll)

- Unmarried+Having a boss-like supervisor
- Unmarried+Having a partner-like supervisor
- Married+Having a boss-like supervisor
- Married+Having a partner-like supervisor
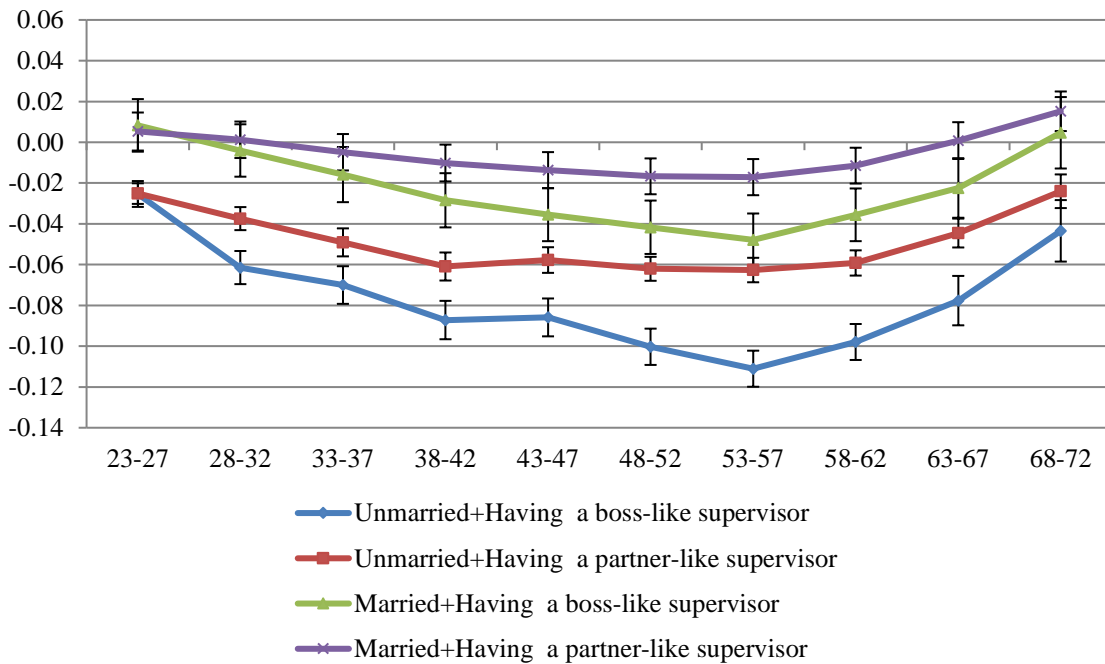
The U-shape is also flatter for those who have lived longer in their communities

If the U-shape in age is importantly based on the quality of the social context, we might also expect to find the U-shape to be less for those who have lived for longer in their local communities, since social foundations take time to build. Danish researchers calculated age distributions of life satisfaction separately for those who have lived for more or less than 15 years in their communities, and found there was a U-shape for both groups, but much deeper for those who were recently arrived in the community.[19] We find that the same pattern appears in large samples of pooled data from several waves of the Canadian General Social Survey (GSS). In the Danish case, the U-shape drop from early to middle ages is significantly less (by about 0.25 points on the 0 to 10 life satisfaction scale used in both countries) for those whose have lived longer in their neighbourhoods.

In the Canadian case the GSS data have separate measures for time in the neighbourhood and time in the "city or local community," with 10 years being in both cases the dividing line between short-term and long-term residence. The most transient of the population groups are the 25-34 year olds. In this group, only 10% have lived for more than 10 years in their current neighbourhood, and 33% in their city. These percentages rise thereafter with age, to 37% and 69% for those aged 45-54, and 84% and 85% for those over 75. As was found with the Danish data, the U-shape in age is shallower for those who have lived for longer in the neighbourhoods.

We estimate the interacted effect of age and time in residence using two econometric models that parallel the models without and with standard control variables used in the previous sections. The simpler model explains well-being using age categories, a dummy variable for long-term residence, a full set of interaction terms between the residence variable and the age groups, plus dummy variables to capture province and year fixed effects. The second model adds a number of individual-level control variables, as shown in the statistical appendix. The figures reported in this section reflect the results for the model that includes the additional controls.

More specifically, the base model is:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Residence_{ijt}\boldsymbol{\beta_2} + \gamma_1 Residence_{ijt} + \mu_t + \rho_j + \varepsilon_{ijt},$$

where SWB_{ijt} indicates a subjective well-being measure of individual i in state j in year of survey t, $Agec_{ijt}$ is a vector of age groups (omitting the 15-24 base age group), $Residence_{ijt}$ is a dummy variable for long-term residence, μ_t is a year fixed effect, ρ_j a province fixed effect, and ε_{ijt} is the error term.

The corresponding model with controls added is:

$$SWB_{ijt} = \alpha_0 + Agec_{ijt}\boldsymbol{\beta_1} + Agec_{ijt}Residence_{ijt}\boldsymbol{\beta_2} + \gamma_1 Residence_{ijt} + X_{ijt}\theta + \mu_t + \rho_j + \varepsilon_{ijt}.$$

where X_{ijt} is a vector of individual and household covariates, including gender, marital status, three levels of education (vs less than high-school completion), and six household income brackets (with a dummy variable for those with income not reported).

Using the model with a full set of controls, Figure 13 shows the U-shapes separately for those who have lived for more and less than 10 years in their current neighbourhoods.

Figure 13: Satisfaction with life difference between each age group and the youngest age group (15-24) in the model with controls, by time in neighbourhood
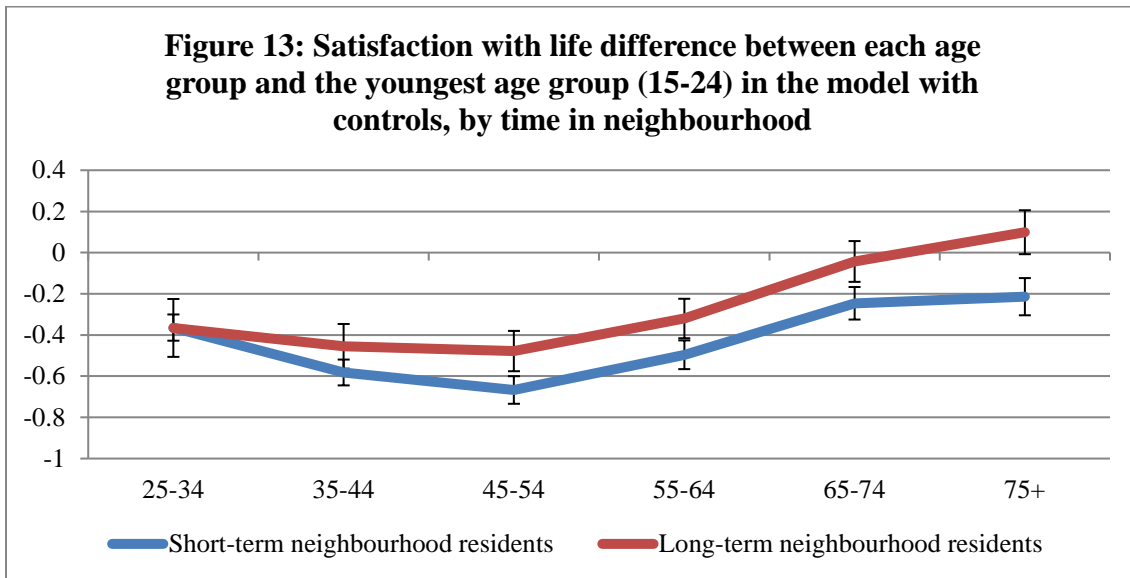
The results are very like those for Denmark, with the age U-shape being less pronounced for those who have lived for longer in their current neighbourhoods. Except for those aged over 75, the well-being improvement effects are largest for those in the 45 to 54 year age group, where satisfaction with life is 0.189 points higher (t=3.3) for those with more than 10 years in the same community than it is for more recent arrivals. Both the size and the shape of this effect are the same as found in Denmark, in both cases about one-quarter of a point.

The Canadian GSS provides additional information that lets us check the nature and some possible sources for the community-based U-shape effects. First, we now have the capacity to see whether the results are specific to time living in the neighbourhood, or more generally to time spent in the same city. This distinction is possibly important, as if the U-shape advantages are derived from friendly neighbours, then neighbourhood tenure might be more important than city tenure. On the other hand, if the support is coming from broader networks of friends in the same activities, then time in the same city might be equally or more important. As was seen from the averages, moves between neighbourhoods in the same city are more frequent than moves from one city to another, such that for the whole sample 34% have lived for more than 10 years in their current neighbourhood, compared to 62% in the same city. Although the averages are different, and move differently between generations, the correlation between these two measures of permanency is quite high (+0.74), making it less surprising that the U-shape effects of the two measures are also very similar, as shown by comparing Figures 13 and 14.

Figure 14 shows the results for time spent living in the same city, just as Figure 13 does for neighbourhood tenure. In both cases long-term residence lessens the life satisfaction drop from youth to middle age, and increases the subsequent improvements. By flattening the left-hand side of the U-shape and increasing the steepness of the right-hand side, the net effect is to increase life satisfaction significantly for those in the highest age groups.

Figure 14: Satisfaction with life difference between each age group and the youngest age group (15-24) in the model with controls, by time in city

Short-term city residents
Long-term city residents
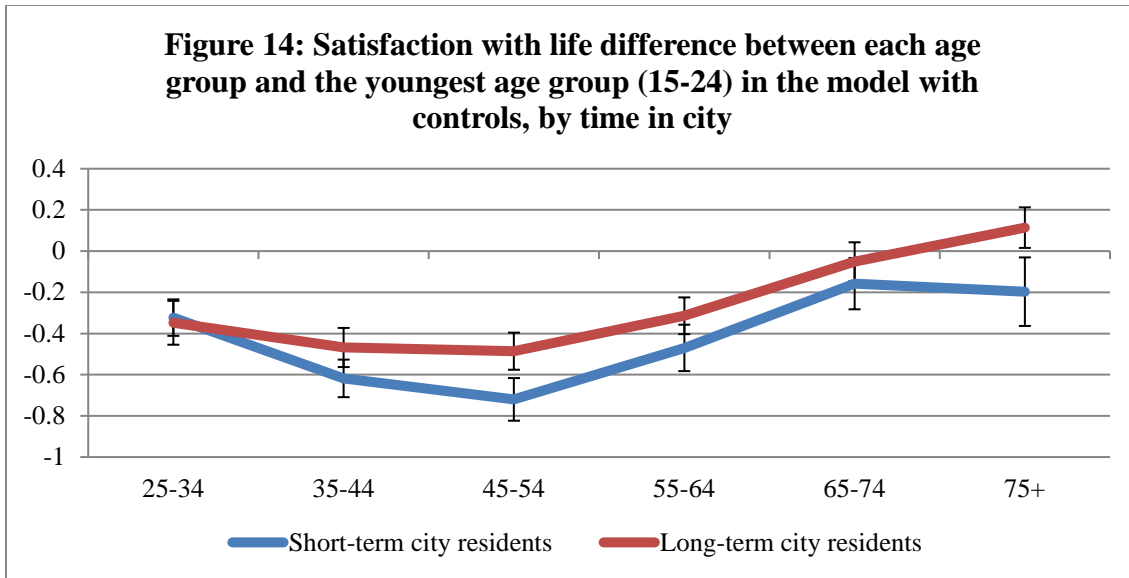
The Canadian GSS also includes a subjective measure of community belonging, thereby permitting us to see if the U-shape effects of time in place are working though an enhanced sense of belonging to the community. Overall, for all the roughly 60,000 observations in the pooled GSS sample, strong vs weak sense of belonging in the community is positively, but fairly weakly, correlated with both time in the neighbourhood (+0.13) and time in the city (+0.11). When we fit the life satisfaction model, with controls, to the sense of community belonging at different ages using the community belonging variable in precisely the same way as previous described for the long-term residence variable, we find that a sense of community belonging has very strong effects on life satisfaction, and that these effects are essentially the same for people in all of the younger age groups. We illustrate this result in Figure 15, where we show two different U-shapes separated only by the effects of strong vs weak sense of belonging to the local community. Those with a strong sense of community belonging have substantially higher life satisfaction at all ages, by 0.71 points (t=15.2) for the 15-24 year olds, and statistically similar amounts at other ages. Only for the age group 75 years and older is there any suggestion of a greater effect, by 0.14 points (t=1.6).

Figure 15: Satisfaction with life difference within each age group in the model with controls, by belonging in GSS

Legend: Weak sense of belonging · Strong sense of belonging
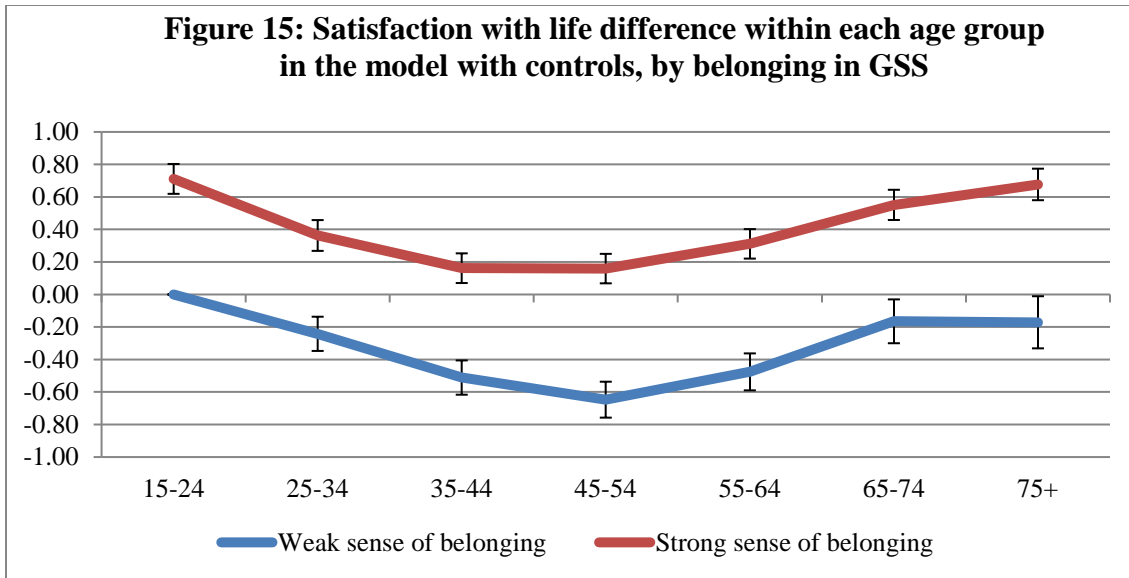
The much larger Canadian Community Health Survey (CCHS) has the same life satisfaction and community belonging questions, so that it is possible (a) to see if the GSS community belonging result of a similar-size life satisfaction premium associated with community belonging for most age groups is replicated with finer age groups and a sample size exceeding 400,000, and (b) to test the hypothesis that community belonging is especially valuable in the oldest age groups. This is done in Figure 16, which indicates a positive answer to both questions. As in the GSS, the effects of community belonging are also large and strongly significant (+0.56 points, t=26.6), and roughly equal in all the younger age groups. Only after age 55 do significant U-shape effects appear, and become greatest at very high ages, being +0.41 (t=6.3) in the 75 to 80 year group and +0.50 (t=8.7) for those over 80 years of age.

Figure 16: Satisfaction with life difference within each age group and the youngest age group in the model with controls, by belonging in CCHS
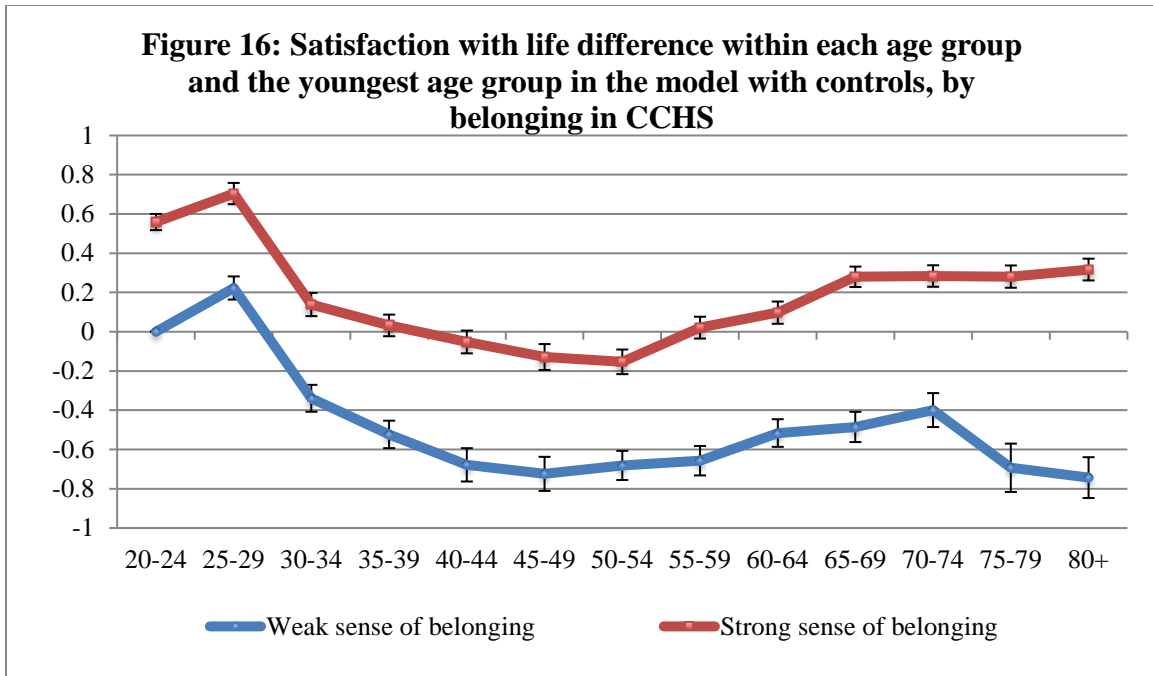
Thus the Canadian evidence suggests that the U-shape effects of length of residence and of community belonging have different age patterns. Time in residence dampens the drop in life satisfaction from young to middle ages while community belonging only acquires significant U-shape influence at higher ages. The greater impact of community belonging for those of greater ages may reflect changing patterns of life, with less time on the job and more in community settings. Those in the oldest age groups are also more likely than those in younger groups to be living alone, whether through divorce or widowhood. This lower prevalence of supportive networks on the job or at home thus may be what elevates the relative importance of the community as a source of social engagement and support.[20]

For both Denmark and Canada, neighbourhood-level social capital, insofar as it is fostered by time spent living in the neighbourhood, dampens the onset and lessens the depth of the U-shape decline in life evaluations from youth to middle ages. The Canadian evidence from two different surveys shows community belonging to be a strong support

for life evaluations at all ages, with U-shape ramifications mainly at higher ages. The CCHS in particular, with its much larger sample sizes, shows that those with a weak sense of community belonging do not have the same rise in life satisfaction at higher ages enjoyed by those with a strong sense of community belonging.

If we estimate a model that includes both time in residence and community belonging, and the interactions between them, we find some evidence that these two measures of local social capital are not independent. In particular, the average life satisfaction gain from living more than ten years in the neighbourhood and having a strong sense of belonging are about 12% less than the sum of the estimated effects when we model the two separately.

Conclusion

Although many researchers have found a U-shape for happiness over the life course, others have noted that the shape appears in some times and places, and not in others.[21] We argue that the social context is likely to be a key determinant of life satisfaction at all stages of life, and in particular that a supportive social context is likely to ameliorate or in a few cases even remove the mid-life low that is characteristic of the U-shape, and to enlarge the typical increase in life evaluations following middle age. Although much of our emphasis has been on the front part of the U-shape, the drop from younger ages into middle age,[22] our study of the effects of community belonging suggests that its power lies mainly in delivering a supportive social context at ages when the workplace become less relevant as working time decreases with age. Our results for the community context suggest it to be most important in the later stages of life, when it comes to replace the workplace as the centerpiece of daily life. [23]

Our evidence relates specifically to workplace congeniality, marriage, time spent living in the same neighbourhood and city, and a sense of community belonging, all of which are associated with higher subjective well-being in general, and especially so for those in the middle or later stages of life. We find that the U-shape in age is significantly shallower, and rises more in the higher age groups, for those with the most supportive

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workplaces, families, neighbourhoods, and cities. Our evidence is based almost entirely on big samples of cross-sectional data, large enough to show highly significant patterns, but adequate only to suggest, but not demonstrate, causal connections. The power and prevalence of these associations suggest to us that more experimental methods and evidence are also likely to demonstrate the power of good social relations to support higher life evaluations, and to provide resilience against the stresses of mid-life, or indeed other problems that people may face.

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[1] For example, see Cheng et al. 2015), and Blanchflower and & Oswald (2004,2008, 2009, 2016, 2018)

[2] See Steptoe et al. (2015) and Fortin et al. (2015).

[3] See Bonke et al. (2017), Wunder et al. (2013), and Laaksonen (2018).

[4] For example, Steptoe et al. (2015, Figures 1 to 4) show self reports of experienced pain to become steadily more frequent as age increases in all four major groups of countries reviewed.

[5] See Weiss et al. (2015).

[6] See Fritjers & Beatton (2012) and Kassenboehmer & Haisken-DeNew (2012).

[7] See Easterlin (2006).

[8] If the sequence of cross-sections is large and frequent enough, this procedure provides a promising way to solve the age/cohort separation problems raised in the U-shape context by De Ree and Alessie (2011), Schilling (2006) and others.

[9] For example, Schwandt (2016), using German panel data, argues that the U-shape is more prevalent among those respondents with unmet expectations for the evolution of their happiness.

[10] For example, see the exchange between Glenn (2009) and Blanchflower and Oswald (2009).

[11] We find evidence for this from a sample combining several waves of life satisfaction data from the Canadian General Social Survey. Regressions of individual SWL on work/life balance, marital status and length of tenure in one's neighbourhood, done separately for the population divided into three age groups, show that the impact of the self-assessed quality of work/life balance is ten times greater for those in the 45 to 54 age group than for older workers. It is 50% greater than for younger workers. By way of comparison, the coefficients for marital status and length of tenure in the neighbourhood are the same for middle-aged and older workers, while being less for younger workers.

[12] Xing and Huang (2014) also find U-shapes that vary for different measures of subjective well-being, in their case based on Chinese data.

[13] Stone et al. (2010), using an earlier and smaller sample of data from the same Gallup daily poll, also show a later trough for positive affect than for the ladder, in their case looking at the whole population.

[14] The data and procedures are explained more fully in Helliwell & Wang (2015).

[15] We exclude the larger samples from Russia, Germany and the United Kingdom (roughly 2,000, 9,000 and 10,000, respectively) because they are sufficient for separate analysis and are large enough to affect the overall findings from a pooled sample.

[16] See Grover and Helliwell (2017).

[17] These included the United Kingdom (Yap et al. 2012), Switzerland (Anusic et al. 2014a) and Australia (Anusic et al. 2014b).

[18] See Grover & Helliwell (2017).

[19] See Bonke et al. (2017, Figure 8).

[20] This is consistent with Van Willigen's (2000) longitudinal analysis showing that the life satisfaction gains from volunteering were larger for elderly than for middle-aged subjects.

[21] As emphasized by Graham & Pozuelo (2017).

[22] This is also the focus of Piper (2015) using UK data.

[23] See Gwodz & Sousa-Poza (2015), Schilling (2006), Mroczek et al. (2005), Steptoe et al. (2015), and Ulloa et al. (2013).

Statistical Appendix to:

Happiness at different ages: The social context matters

John F. Helliwell, Haifang Huang, Max Norton and Shun Wang

LIST OF TABLES

Table 1. Summary statistics, US Gallup-Healthways Daily Poll

	Obs	Mean	Std. Dev.
Cantril ladder	2,536,594	6.942	1.900
Happiness (yesterday)	2,471,332	0.882	0.322
Male	2,638,817	0.485	0.500
Married	2,606,067	0.583	0.493
Age	2,596,835	47.632	17.886
Number of children	2,633,505	0.735	1.181
Full-time paid workder	2,638,824	0.440	0.496
Part-time paid worker	2,638,824	0.122	0.328
Log of household income	2,638,824	8.378	4.457
Income not reported	2,638,824	0.212	0.409
Age group			
18-22	2,596,835	0.089	0.284
23-27	2,596,835	0.077	0.266
28-32	2,596,835	0.080	0.271
33-37	2,596,835	0.077	0.266
38-42	2,596,835	0.086	0.281
43-47	2,596,835	0.097	0.296
48-52	2,596,835	0.098	0.297
53-57	2,596,835	0.087	0.282
58-62	2,596,835	0.088	0.284
63-67	2,596,835	0.071	0.257
68-72	2,596,835	0.054	0.226
73-77	2,596,835	0.041	0.199
78-82	2,596,835	0.031	0.173
83+	2,596,835	0.026	0.158
Highest level of education:			
High school	2,600,450	0.350	0.477
Some college	2,600,450	0.232	0.422
College graduate	2,600,450	0.171	0.376
Postgraduate	2,600,450	0.134	0.340

Table 2. Summary statistics, UK Annual Population Survey

	Obs	Mean	Std. Dev.
Satisfaction with life	331,249	7.430	1.868
Happiness (yesterday)	331,126	7.287	2.210
Male	335,296	0.489	0.500
Married	335,296	0.451	0.498
Age	335,296	46.962	18.722
Full-time paid workder	335,296	0.404	0.491
Part-time paid worker	335,296	0.162	0.368
Log of household income	335,296	2.487	2.915
Income not reported	335,296	0.571	0.495
Age group			
18-27	333,384	0.175	0.380
28-32	333,384	0.089	0.285
33-37	333,384	0.083	0.276
38-42	333,384	0.087	0.282
43-47	333,384	0.091	0.287
48-52	333,384	0.088	0.284
53-57	333,384	0.075	0.264
58-62	333,384	0.071	0.258
63-67	333,384	0.073	0.260
68-72	333,384	0.053	0.224
73-77	333,384	0.046	0.210
78-82	333,384	0.034	0.180
83+	333,384	0.032	0.177
Highest level of education:			
Degree or equivalent	335,296	0.216	0.412
Higher education	335,296	0.083	0.275
GCE, A-level or equivalent	335,296	0.206	0.405
GCSE grades A*-C or equivalent	335,296	0.182	0.386
Other qualifications	335,296	0.081	0.273
No qualification	335,296	0.089	0.285

Table 3A. Regression results for Cantril ladder score, US Gallup-Healthways Daily Poll

Social variable:	(1) Age group only	(2) Partner, no controls	(3) Partner, with controls	(4) Marriage, no controls	(5) Marriage, with controls
Associated figure:		Figs. 1, 7a	Fig. 7b	Fig. 9a	Fig. 9b
Explanatory variable:					
Age 23-27	-0.203***	-0.207***	-0.397***	-0.361***	-0.472***
	(0.008)	(0.017)	(0.017)	(0.012)	(0.011)
Age 28-32	-0.134***	-0.166***	-0.502***	-0.498***	-0.613***
	(0.008)	(0.016)	(0.016)	(0.017)	(0.014)
Age 33-37	-0.132***	-0.187***	-0.586***	-0.635***	-0.736***
	(0.008)	(0.016)	(0.017)	(0.017)	(0.015)
Age 38-42	-0.180***	-0.225***	-0.652***	-0.719***	-0.805***
	(0.008)	(0.016)	(0.017)	(0.017)	(0.016)
Age 43-47	-0.270***	-0.310***	-0.731***	-0.790***	-0.864***
	(0.008)	(0.016)	(0.017)	(0.018)	(0.016)
Age 48-52	-0.303***	-0.290***	-0.712***	-0.823***	-0.868***
	(0.008)	(0.015)	(0.017)	(0.016)	(0.015)
Age 53-57	-0.319***	-0.306***	-0.728***	-0.835***	-0.873***
	(0.007)	(0.016)	(0.017)	(0.015)	(0.014)
Age 58-62	-0.174***	-0.231***	-0.648***	-0.654***	-0.707***
	(0.007)	(0.016)	(0.018)	(0.013)	(0.012)
Age 63-67	0.031***	-0.089***	-0.479***	-0.382***	-0.427***
	(0.007)	(0.022)	(0.022)	(0.013)	(0.013)
Age 68-72	0.163***	0.038	-0.264***	-0.167***	-0.187***
	(0.008)	(0.031)	(0.031)	(0.013)	(0.012)
Age 73-77	0.205***			-0.023	-0.022
	(0.009)			(0.013)	(0.013)
Age 78-82	0.240***			0.093***	0.088***
	(0.009)			(0.013)	(0.013)
Age 83+	0.250***			0.211***	0.197***
	(0.010)			(0.013)	(0.013)
Age 23-27		0.075***	0.040	0.428***	0.374***

* social variable	(0.021)	(0.021)	(0.025)	(0.024)
Age 28-32	0.124***	0.073***	0.625***	0.463***
* social variable	(0.020)	(0.020)	(0.028)	(0.024)
Age 33-37	0.172***	0.101***	0.749***	0.513***
* social variable	(0.021)	(0.020)	(0.027)	(0.024)
Age 38-42	0.195***	0.121***	0.781***	0.511***
* social variable	(0.020)	(0.020)	(0.026)	(0.024)
Age 43-47	0.235***	0.143***	0.765***	0.486***
* social variable	(0.020)	(0.020)	(0.026)	(0.024)
Age 48-52	0.216***	0.126***	0.777***	0.498***
* social variable	(0.020)	(0.019)	(0.025)	(0.024)
Age 53-57	0.257***	0.161***	0.779***	0.516***
* social variable	(0.020)	(0.019)	(0.024)	(0.022)
Age 58-62	0.285***	0.185***	0.724***	0.506***
* social variable	(0.020)	(0.019)	(0.024)	(0.023)
Age 63-67	0.266***	0.169***	0.629***	0.464***
* social variable	(0.025)	(0.025)	(0.024)	(0.024)
Age 68-72	0.210***	0.114**	0.526***	0.400***
* social variable	(0.036)	(0.036)	(0.025)	(0.024)
Age 73-77			0.401***	0.303***
* social variable			(0.025)	(0.025)
Age 78-82			0.309***	0.243***
* social variable			(0.025)	(0.024)
Age 83+			0.130***	0.105***
* social variable			(0.029)	(0.028)
Partner	0.166***	0.162***		
	(0.015)	(0.015)		
Married		0.343***	-0.016	-0.026
		(0.006)	(0.021)	(0.021)
Male		-0.234***		-0.286***
		(0.004)		(0.003)
Highest education: High School		0.048**		0.088***
		(0.017)		(0.009)

	(1)	(2)	(3)	(4)	(5)
Some college			0.053** (0.017)		0.100*** (0.011)
College graduate			0.293*** (0.018)		0.371*** (0.013)
Postgraduate			0.463*** (0.019)		0.553*** (0.013)
Number of children			-0.006* (0.003)		0.011*** (0.002)
Full-time paid worker			0.072*** (0.007)		0.210*** (0.004)
Part-time paid worker					0.090*** (0.006)
Log of household income			0.309*** (0.006)		0.291*** (0.004)
Income not reported			3.536*** (0.065)		3.297*** (0.048)
Survey year fixed effects	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	6.949*** (0.014)	6.917*** (0.028)	3.647*** (0.070)	6.962*** (0.043)	3.890*** (0.056)
Observations	2,492,316	1,007,381	997,149	2,474,153	2,458,413
Adjusted R-squared	0.011	0.017	0.076	0.035	0.084

Notes: The sample in columns 2 and 3 covers respondents aged 18-72. The sample in other columns covers respondents aged 18+. Robust standard errors in parentheses are clustered by county. Two-tailed significances indicated by asterisks: ***p<0.001, **p<0.01, *p<0.05.

Table 3B. Additional regression results for Cantril ladder score, US Gallup-Healthways Daily Poll

	(6) Marriage & partner, no controls	(7) Marriage & partner, with controls
Social context variable:		
Associated figure:	Fig. 11a	Fig. 11b
Explanatory variable:		
Age 23-27	-0.332*** (0.020)	-0.428*** (0.020)
Age 28-32	-0.461*** (0.023)	-0.577*** (0.022)
Age 33-37	-0.559*** (0.028)	-0.665*** (0.027)
Age 38-42	-0.592*** (0.024)	-0.717*** (0.023)
Age 43-47	-0.666*** (0.024)	-0.788*** (0.024)
Age 48-52	-0.652*** (0.022)	-0.785*** (0.022)
Age 53-57	-0.671*** (0.023)	-0.816*** (0.023)
Age 58-62	-0.591*** (0.025)	-0.744*** (0.026)
Age 63-67	-0.327*** (0.031)	-0.497*** (0.032)
Age 68-72	-0.110* (0.045)	-0.214*** (0.045)
Age 23-27 * Partner	0.066** (0.024)	0.036 (0.024)
Age 28-32 * Partner	0.132*** (0.026)	0.098*** (0.026)
Age 33-37 * Partner	0.126*** (0.034)	0.084* (0.034)
Age 38-42 * Partner	0.146***	0.112***

	(0.031)	(0.030)
Age 43-47 * Partner	0.158***	0.102***
	(0.030)	(0.030)
Age 48-52 * Partner	0.166***	0.116***
	(0.028)	(0.028)
Age 53-57 * Partner	0.210***	0.158***
	(0.028)	(0.028)
Age 58-62 * Partner	0.278***	0.213***
	(0.031)	(0.030)
Age 63-67 * Partner	0.215***	0.171***
	(0.040)	(0.039)
Age 68-72 * Partner	0.126*	0.075
	(0.052)	(0.053)
Age 23-27 * Married	0.393***	0.343***
	(0.042)	(0.042)
Age 28-32 * Married	0.571***	0.447***
	(0.044)	(0.042)
Age 33-37 * Married	0.612***	0.450***
	(0.048)	(0.047)
Age 38-42 * Married	0.586***	0.427***
	(0.044)	(0.043)
Age 43-47 * Married	0.575***	0.416***
	(0.043)	(0.042)
Age 48-52 * Married	0.580***	0.438***
	(0.041)	(0.041)
Age 53-57 * Married	0.591***	0.458***
	(0.043)	(0.042)
Age 58-62 * Married	0.592***	0.471***
	(0.045)	(0.044)
Age 63-67 * Married	0.422***	0.352***
	(0.051)	(0.050)
Age 68-72 * Married	0.302***	0.235***
	(0.065)	(0.065)

Age 23-27 * Partner * Married	-0.038	-0.033
	(0.056)	(0.055)
Age 28-32 * Partner * Married	-0.102*	-0.100
	(0.052)	(0.052)
Age 33-37 * Partner * Married	-0.025	-0.037
	(0.058)	(0.058)
Age 38-42 * Partner * Married	-0.021	-0.046
	(0.054)	(0.053)
Age 43-47 * Partner * Married	0.013	-0.003
	(0.053)	(0.053)
Age 48-52 * Partner * Married	-0.021	-0.045
	(0.052)	(0.052)
Age 53-57 * Partner * Married	-0.028	-0.058
	(0.053)	(0.052)
Age 58-62 * Partner * Married	-0.083	-0.100
	(0.055)	(0.055)
Age 63-67 * Partner * Married	-0.005	-0.053
	(0.062)	(0.061)
Age 68-72 * Partner * Married	0.057	0.026
	(0.080)	(0.079)
Partner	0.160***	0.155***
	(0.016)	(0.016)
Married	-0.062	-0.063
	(0.037)	(0.037)
Partner * Married	0.047	0.067
	(0.046)	(0.046)
Male		-0.237***
		(0.004)
Highest education:		
High School		0.047**
		(0.017)
Some college		0.050**
		(0.017)

College graduate		0.290***
		(0.018)
Postgraduate		0.460***
		(0.019)
Number of children		-0.007**
		(0.003)
Full-time paid worker		0.081***
		(0.007)
Log of household income		0.304***
		(0.006)
Income not reported		3.477***
		(0.064)
Survey year fixed effects	Yes	Yes
State fixed effects	Yes	Yes
Constant	6.926***	3.754***
	(0.031)	(0.069)
Observations	1,001,202	997,149
Adjusted R-squared	0.034	0.076

Notes: The sample covers respondents aged 18+. Robust standard errors in parentheses are clustered by county. Two-tailed significances indicated by asterisks: ***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 4A. Regression results for happiness yesterday, US Gallup-Healthways Daily Poll

	(1) Age group averages	(2) Partner, no controls	(3) Partner, with controls	(4) Marriage, no controls	(5) Marriage, with controls
Social variable:					
Associated figure:		Figs. 2, 8a	Fig. 8b	Fig. 10a	Fig. 10b
Explanatory variable:					
Age 23-27	-0.015***	-0.010***	-0.023***	-0.028***	-0.039***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 28-32	-0.023***	-0.024***	-0.047***	-0.058***	-0.067***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 33-37	-0.027***	-0.028***	-0.056***	-0.076***	-0.084***
	(0.001)	(0.003)	(0.003)	(0.003)	(0.003)
Age 38-42	-0.038***	-0.040***	-0.070***	-0.099***	-0.104***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 43-47	-0.049***	-0.045***	-0.075***	-0.109***	-0.112***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 48-52	-0.060***	-0.054***	-0.083***	-0.125***	-0.124***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 53-57	-0.068***	-0.062***	-0.091***	-0.138***	-0.134***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 58-62	-0.057***	-0.051***	-0.079***	-0.125***	-0.119***
	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)
Age 63-67	-0.036***	-0.038***	-0.064***	-0.094***	-0.082***
	(0.001)	(0.004)	(0.004)	(0.002)	(0.002)
Age 68-72	-0.020***	-0.017**	-0.035***	-0.066***	-0.046***
	(0.001)	(0.005)	(0.005)	(0.002)	(0.002)
Age 73-77	-0.018***			-0.050***	-0.026***
	(0.001)			(0.002)	(0.002)
Age 78-82	-0.019***			-0.041***	-0.015***
	(0.001)			(0.002)	(0.002)
Age 83+	-0.027***			-0.037***	-0.011***
	(0.002)			(0.002)	(0.002)
Age 23-27		-0.001	-0.002	0.042***	0.036***

* social variable	(0.003)	(0.003)	(0.003)	(0.003)
Age 28-32 * social variable	0.013*** (0.004)	0.011** (0.004)	0.069*** (0.003)	0.051*** (0.003)
Age 33-37 * social variable	0.015*** (0.004)	0.012** (0.004)	0.083*** (0.004)	0.058*** (0.004)
Age 38-42 * social variable	0.022*** (0.004)	0.018*** (0.004)	0.097*** (0.004)	0.068*** (0.004)
Age 43-47 * social variable	0.026*** (0.004)	0.021*** (0.004)	0.098*** (0.004)	0.067*** (0.004)
Age 48-52 * social variable	0.032*** (0.004)	0.027*** (0.004)	0.106*** (0.004)	0.074*** (0.003)
Age 53-57 * social variable	0.040*** (0.004)	0.034*** (0.004)	0.115*** (0.004)	0.084*** (0.003)
Age 58-62 * social variable	0.033*** (0.003)	0.027*** (0.003)	0.110*** (0.004)	0.085*** (0.004)
Age 63-67 * social variable	0.030*** (0.005)	0.024*** (0.005)	0.098*** (0.003)	0.077*** (0.003)
Age 68-72 * social variable	0.018** (0.006)	0.012* (0.006)	0.082*** (0.003)	0.063*** (0.003)
Age 73-77 * social variable			0.066*** (0.004)	0.049*** (0.003)
Age 78-82 * social variable			0.055*** (0.004)	0.040*** (0.004)
Age 83+ * social variable			0.039*** (0.004)	0.027*** (0.004)
Partner	0.032*** (0.003)	0.031*** (0.003)		
Married		0.033*** (0.001)	-0.013*** (0.003)	-0.011*** (0.003)
Male		-0.011*** (0.001)		-0.015*** (0.001)
Highest education: High School		0.031*** (0.002)		0.044*** (0.001)

Some college			0.038***		0.054***
			(0.002)		(0.001)
College graduate			0.042***		0.062***
			(0.002)		(0.001)
Postgraduate			0.037***		0.060***
			(0.002)		(0.001)
Number of children			0.000		0.003***
			(0.000)		(0.000)
Full-time paid worker			0.004***		0.042***
			(0.001)		(0.001)
Part-time paid worker					0.033***
					(0.001)
Log of household income			0.019***		0.025***
			(0.001)		(0.000)
Income not reported			0.210***		0.279***
			(0.007)		(0.004)
Survey year fixed effects	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	0.916***	0.913***	0.685***	0.919***	0.599***
	(0.002)	(0.004)	(0.007)	(0.004)	(0.005)
Observations	2,427,376	1,041,237	1,030,686	2,410,263	2,394,457
Adjusted R-squared	0.005	0.010	0.018	0.017	0.034

Notes: The sample in columns 2 and 3 covers respondents aged 18-72. The sample in other columns covers respondents aged 18+. Robust standard errors in parentheses are clustered by county. Two-tailed significances indicated by asterisks: ***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 4B. Regression results for happiness yesterday, US Gallup-Healthways Daily Poll

	(6) Marriage & partner, no controls	(7) Marriage & partner, with controls
Social context variable:		
Associated figure:	Fig. 12a	Fig. 12b
Explanatory variable:		
Age 23-27	-0.021*** (0.003)	-0.025*** (0.003)
Age 28-32	-0.057*** (0.004)	-0.061*** (0.004)
Age 33-37	-0.066*** (0.005)	-0.070*** (0.005)
Age 38-42	-0.082*** (0.005)	-0.087*** (0.005)
Age 43-47	-0.081*** (0.005)	-0.086*** (0.005)
Age 48-52	-0.095*** (0.005)	-0.100*** (0.005)
Age 53-57	-0.106*** (0.004)	-0.111*** (0.005)
Age 58-62	-0.093*** (0.005)	-0.098*** (0.005)
Age 63-67	-0.072*** (0.006)	-0.078*** (0.006)
Age 68-72	-0.044*** (0.008)	-0.043*** (0.008)
Age 23-27 * Partner	0.001 (0.004)	0.000 (0.004)
Age 28-32 * Partner	0.024*** (0.005)	0.024*** (0.005)
Age 33-37 * Partner	0.022*** (0.006)	0.021*** (0.006)
Age 38-42 * Partner	0.027***	0.026***

	(0.005)	(0.005)
Age 43-47 * Partner	0.030***	0.028***
	(0.006)	(0.006)
Age 48-52 * Partner	0.040***	0.038***
	(0.005)	(0.005)
Age 53-57 * Partner	0.051***	0.048***
	(0.005)	(0.005)
Age 58-62 * Partner	0.042***	0.039***
	(0.005)	(0.005)
Age 63-67 * Partner	0.035***	0.033***
	(0.007)	(0.007)
Age 68-72 * Partner	0.023**	0.019*
	(0.009)	(0.009)
Age 23-27 * Married	0.038***	0.034***
	(0.007)	(0.007)
Age 28-32 * Married	0.065***	0.057***
	(0.008)	(0.008)
Age 33-37 * Married	0.064***	0.054***
	(0.008)	(0.008)
Age 38-42 * Married	0.068***	0.059***
	(0.008)	(0.008)
Age 43-47 * Married	0.061***	0.050***
	(0.008)	(0.008)
Age 48-52 * Married	0.068***	0.059***
	(0.008)	(0.008)
Age 53-57 * Married	0.073***	0.063***
	(0.008)	(0.008)
Age 58-62 * Married	0.071***	0.062***
	(0.008)	(0.008)
Age 63-67 * Married	0.061***	0.055***
	(0.009)	(0.009)
Age 68-72 * Married	0.054***	0.048***
	(0.012)	(0.011)

Age 23-27 * Partner * Married	-0.004	-0.003
	(0.009)	(0.009)
Age 28-32 * Partner * Married	-0.018*	-0.019*
	(0.009)	(0.009)
Age 33-37 * Partner * Married	-0.009	-0.010
	(0.010)	(0.010)
Age 38-42 * Partner * Married	-0.006	-0.008
	(0.009)	(0.009)
Age 43-47 * Partner * Married	-0.005	-0.006
	(0.010)	(0.010)
Age 48-52 * Partner * Married	-0.011	-0.013
	(0.009)	(0.009)
Age 53-57 * Partner * Married	-0.016	-0.018
	(0.009)	(0.009)
Age 58-62 * Partner * Married	-0.014	-0.015
	(0.009)	(0.009)
Age 63-67 * Partner * Married	-0.008	-0.010
	(0.011)	(0.011)
Age 68-72 * Partner * Married	-0.008	-0.009
	(0.013)	(0.013)
Partner	0.033***	0.032***
	(0.003)	(0.003)
Married	-0.009	-0.008
	(0.006)	(0.006)
Partner * Married	-0.006	-0.005
	(0.008)	(0.008)
Male		-0.012***
		(0.001)
Highest education: High School		0.031***
		(0.002)
Some college		0.038***
		(0.002)
College graduate		0.041***

		(0.002)
Postgraduate		0.037***
		(0.002)
Number of children		0.000
		(0.000)
Full-time paid worker		0.005***
		(0.001)
Log of household income		0.018***
		(0.001)
Income not reported		0.201***
		(0.007)
Survey year fixed effects	Yes	Yes
State fixed effects	Yes	Yes
Constant	0.914***	0.698***
	(0.004)	(0.007)
Observations	1,034,925	1,030,686
Adjusted R-squared	0.014	0.019

Notes: The sample covers respondents aged 18-72. Robust standard errors in parentheses are clustered by county. Two-tailed significances indicated by asterisks: ***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 5. Regression results for satisfaction with life, UK Annual Population Survey

Explanatory variable:	(1) Age group averages	(2) Marriage, no controls	(3) Marriage, with controls
Age 28-32	-0.040*	-0.232***	-0.375***
	(0.019)	(0.023)	(0.023)
Age 33-37	-0.117***	-0.435***	-0.573***
	(0.019)	(0.025)	(0.025)
Age 38-42	-0.274***	-0.684***	-0.794***
	(0.019)	(0.026)	(0.025)
Age 43-47	-0.399***	-0.834***	-0.942***
	(0.019)	(0.026)	(0.026)
Age 48-52	-0.425***	-0.930***	-1.020***
	(0.019)	(0.027)	(0.027)
Age 53-57	-0.402***	-0.937***	-0.979***
	(0.019)	(0.029)	(0.028)
Age 58-62	-0.147***	-0.644***	-0.559***
	(0.019)	(0.029)	(0.029)
Age 63-67	0.157***	-0.271***	-0.019
	(0.018)	(0.027)	(0.028)
Age 68-72	0.239***	-0.083**	0.223***
	(0.019)	(0.028)	(0.031)
Age 73-77	0.230***	0.017	0.310***
	(0.022)	(0.032)	(0.040)
Age 78-82	0.209***	0.052	0.347***
	(0.027)	(0.037)	(0.044)
Age 83+	0.031	-0.021	0.278***
	(0.030)	(0.035)	(0.043)

Age 28-32 * Married	0.104*	0.146**
	(0.048)	(0.048)
Age 33-37 * Married	0.203***	0.234***
	(0.048)	(0.048)
Age 38-42 * Married	0.332***	0.343***
	(0.048)	(0.047)
Age 43-47 * Married	0.386***	0.394***
	(0.048)	(0.047)
Age 48-52 * Married	0.466***	0.468***
	(0.048)	(0.048)
Age 53-57 * Married	0.464***	0.478***
	(0.050)	(0.049)
Age 58-62 * Married	0.376***	0.431***
	(0.050)	(0.049)
Age 63-67 * Married	0.245***	0.330***
	(0.048)	(0.048)
Age 68-72 * Married	0.105*	0.221***
	(0.049)	(0.049)
Age 73-77 * Married	-0.016	0.135*
	(0.053)	(0.053)
Age 78-82 * Married	-0.040	0.126*
	(0.062)	(0.062)
Age 83+ * Married	-0.148*	0.038
	(0.070)	(0.070)
Married	0.493***	0.389***
	(0.040)	(0.039)
Male		-0.215***
		(0.009)

Highest education:			
Degree or equivalent			0.077**
			(0.026)
Higher education			0.061*
			(0.027)
GCE, A-level or equivalent			0.092***
			(0.026)
GCSE grades A*-C or equivalent			-0.043
			(0.027)
Other qualifications			-0.109***
			(0.029)
No qualification			-0.239***
			(0.028)
Full-time paid worker			0.579***
			(0.016)
Part-time paid worker			0.547***
			(0.017)
Log of household income			0.159***
			(0.010)
Income not reported			0.873***
			(0.061)
Constant	7.532***	7.489***	6.377***
	(0.013)	(0.014)	(0.064)
Observations	329,348	329,348	329,348
Adjusted R-squared	0.014	0.049	0.074

Notes: The omitted age group is 18-27. Robust standard errors in parentheses. Two-tailed significances indicated by asterisks: ***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 6. Regression results for happiness yesterday, UK Annual Population Survey

	(1) Age group averages	(2) Marriage, no controls	(3) Marriage, with controls
Explanatory variable:			
Age 28-32	0.011	-0.150***	-0.235***
	(0.024)	(0.028)	(0.028)
Age 33-37	-0.032	-0.308***	-0.386***
	(0.023)	(0.031)	(0.031)
Age 38-42	-0.106***	-0.449***	-0.506***
	(0.023)	(0.031)	(0.031)
Age 43-47	-0.228***	-0.559***	-0.610***
	(0.023)	(0.031)	(0.031)
Age 48-52	-0.237***	-0.636***	-0.672***
	(0.023)	(0.032)	(0.032)
Age 53-57	-0.197***	-0.619***	-0.620***
	(0.023)	(0.033)	(0.033)
Age 58-62	0.041	-0.363***	-0.275***
	(0.023)	(0.034)	(0.034)
Age 63-67	0.361***	-0.029	0.177***
	(0.022)	(0.032)	(0.033)
Age 68-72	0.473***	0.163***	0.422***
	(0.023)	(0.033)	(0.038)
Age 73-77	0.428***	0.181***	0.437***
	(0.026)	(0.038)	(0.046)
Age 78-82	0.341***	0.159***	0.417***
	(0.032)	(0.042)	(0.051)
Age 83+	0.182***	0.141***	0.403***
	(0.033)	(0.039)	(0.048)

Age 28-32 * Married	0.107	0.120*
	(0.061)	(0.061)
Age 33-37 * Married	0.209***	0.211***
	(0.060)	(0.060)
Age 38-42 * Married	0.300***	0.291***
	(0.060)	(0.060)
Age 43-47 * Married	0.283***	0.272***
	(0.060)	(0.059)
Age 48-52 * Married	0.369***	0.353***
	(0.060)	(0.060)
Age 53-57 * Married	0.367***	0.360***
	(0.061)	(0.061)
Age 58-62 * Married	0.315***	0.332***
	(0.061)	(0.061)
Age 63-67 * Married	0.278***	0.313***
	(0.060)	(0.060)
Age 68-72 * Married	0.177**	0.236***
	(0.061)	(0.061)
Age 73-77 * Married	0.136*	0.224***
	(0.065)	(0.066)
Age 78-82 * Married	0.103	0.202**
	(0.074)	(0.074)
Age 83+ * Married	-0.120	-0.008
	(0.082)	(0.082)
Married	0.387***	0.327***
	(0.050)	(0.051)
Male		-0.136***
		(0.011)

Highest education:			
Degree or equivalent			0.152***
			(0.030)
Higher education			0.116***
			(0.032)
GCE, A-level or equivalent			0.103***
			(0.031)
GCSE grades A*-C or equivalent			0.020
			(0.031)
Other qualifications			-0.028
			(0.034)
No qualification			-0.232***
			(0.032)
Full-time paid worker			0.409***
			(0.019)
Part-time paid worker			0.388***
			(0.021)
Log of household income			0.036**
			(0.013)
Income not reported			0.207**
			(0.077)
Constant	7.258***	7.224***	6.792***
	(0.016)	(0.017)	(0.080)
Observations	329,227	329,227	329,227
Adjusted R-squared	0.010	0.027	0.036

Notes: The omitted age group is 18-27. Robust standard errors in parentheses. Two-tailed significances indicated by asterisks: ***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 7. Summary statistics, Canada General Social Survey

	Obs	Mean	Std. Dev.
Satisfaction with life	104,258	8.020	1.726
Male	104,258	0.450	0.498
Married	104,258	0.554	0.497
Not reported	104,258	0.001	0.034
Long-term neighbourhood resident	91,821	0.338	0.473
Long-term city resident	61,673	0.624	0.484
Strong sense of community belonging	101,458	0.771	0.420

	Obs	Percent of total*
Age group		
15-24	12,707	12.19%
25-34	14,180	13.60%
35-44	17,866	17.14%
45-54	18,417	17.66%
55-64	18,685	17.92%
65-74	13,412	12.86%
75+	8,991	8.62%
Annual household income		
0 - $20,000	8,268	7.93%
$20,000 - $39,999	15,965	15.31%
$40,000 - $59,999	15,389	14.76%
$60,000 - $79,999	11,785	11.30%
$80,000 - $99,999	8,852	8.49%
$100,000 - $119,999	17,547	16.83%
Not reported	26,452	25.37%
Highest level of education:		
Less than high school graduate	18,952	18.18%
High school graduate	28,497	27.33%
Some postsecondary	30,243	29.01%
University graduate	25,425	24.39%
Not reported	1,141	1.09%

*Represents percent of total observations with a reported life satisfaction score.

Table 8. Summary statistics, Canadian Community Health Survey

	Obs	Mean	Std. Dev.
Satisfaction with life	425,662	8.013	1.665
Male	425,662	0.446	0.497
Married	425,662	0.508	0.500
Not reported	425,662	0.002	0.048
Strong sense of community belonging	419,533	0.7021474	0.4573149

	Obs	Percent of total*
Age group		
20-24	23,312	5.48%
25-29	25,784	6.06%
30-34	25,143	5.91%
35-39	26,658	6.26%
40-44	26,293	6.18%
45-49	23,878	5.61%
50-54	33,099	7.78%
55-59	40,167	9.44%
60-64	41,622	9.78%
65-69	37,136	8.72%
70-74	27,987	6.57%
75-79	21,776	5.12%
80+	27,040	6.35%
Annual household income		
0 - $20,000	44,832	10.53%
$20,000 - $39,999	89,282	20.97%
$40,000 - $59,999	76,792	18.04%
$60,000 - $79,999	60,719	14.26%
$80,000+	143,075	33.61%
Not reported	10,962	2.58%
Highest level of education:		
Less than high school graduate	98,409	23.12%
High school graduate	75,606	17.76%
Some postsecondary	21,950	5.16%
University graduate	218,658	51.37%
Not reported	11,039	2.59%

*Represents percent of total observations with a reported life satisfaction score.

Table 9A. Regression results for satisfaction with life, Canada General Social Survey

	(1) Age grp only	(2) Long-term in neighbourhood	(3)	(4) Long-term in city	(5)
Social context variable:					
Associated figure:		Fig. 13		Fig. 14	
Explanatory variable:					
Age 25-34	-0.021	-0.005	-0.364***	0.051	-0.323***
	(0.027)	(0.029)	(0.032)	(0.043)	(0.045)
Age 35-44	-0.084***	-0.127***	-0.582***	-0.160***	-0.618***
	(0.025)	(0.029)	(0.032)	(0.045)	(0.047)
Age 45-54	-0.112***	-0.250***	-0.667***	-0.301***	-0.720***
	(0.026)	(0.033)	(0.034)	(0.052)	(0.053)
Age 55-64	0.036	-0.142***	-0.496***	-0.126*	-0.470***
	(0.025)	(0.034)	(0.036)	(0.057)	(0.057)
Age 65-74	0.233***	0.015	-0.246***	0.091	-0.158*
	(0.027)	(0.039)	(0.040)	(0.064)	(0.064)
Age 75-84	0.195***	-0.072	-0.214***	-0.099	-0.197*
	(0.031)	(0.045)	(0.046)	(0.084)	(0.085)
Age 25-34 * social variable		-0.149	-0.002	-0.093	-0.007
		(0.077)	(0.076)	(0.067)	(0.066)
Age 35-44 * social variable		0.130*	0.127*	0.157*	0.150*
		(0.061)	(0.060)	(0.063)	(0.062)
Age 45-54 * social variable		0.243***	0.189***	0.271***	0.234***
		(0.058)	(0.057)	(0.067)	(0.067)
Age 55-64 * social variable		0.247***	0.176**	0.233***	0.156*
		(0.057)	(0.057)	(0.071)	(0.070)
Age 65-74 * social variable		0.277***	0.203***	0.193*	0.107
		(0.062)	(0.062)	(0.077)	(0.077)
Age 75-84 * social variable		0.343***	0.313***	0.391***	0.311**
		(0.069)	(0.070)	(0.097)	(0.097)
Social variable		-0.006	0.008	-0.035	-0.018
		(0.047)	(0.048)	(0.052)	(0.052)
Male			-0.085***		-0.087***

	(1)	(2)	(3)	(4)	(5)
			(0.014)		(0.017)
Married			0.578***		0.579***
			(0.017)		(0.021)
Marital status not reported			0.064		0.159
			(0.387)		(0.494)
Highest education:					
High schoool graduate			-0.032		-0.058
			(0.024)		(0.030)
Some postsecondary			-0.015		-0.043
			(0.025)		(0.030)
University graduate			0.040		0.015
			(0.025)		(0.031)
Education not reported			-0.091		-0.208
			(0.098)		(0.114)
Annual household income:					
0 - $20,000			-0.561***		-0.478***
			(0.035)		(0.044)
$20,000 - $39,999			-0.256***		-0.213***
			(0.026)		(0.032)
$40,000 - $59,999			-0.063*		-0.010
			(0.025)		(0.030)
$60,000 - $79,999			0.020		0.065*
			(0.025)		(0.031)
$80,000 - $99,999			0.059*		0.147***
			(0.028)		(0.033)
$100,000 - $119,999			0.227***		0.282***
			(0.022)		(0.026)
Survey cycle fixed effects	No	Yes	Yes	Yes	Yes
Province fixed effects	No	Yes	Yes	Yes	Yes
Constant	8.019***	8.242***	8.321***	8.108***	8.194***
	(0.020)	(0.038)	(0.043)	(0.051)	(0.057)
Observations	104,258	91,821	91,821	61,673	61,673
Adjusted R-squared	0.004	0.025	0.066	0.029	0.072

Notes: Robust standard errors in parentheses. Two-tailed significances indicated by asterisks: ***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 9B. Additional regression results for satisfaction with life, Canada General Social Survey

	(6)	(7)
Social context variable:	Strong sense of community belonging	
Associated figure:	Fig. 15	
Explanatory variable:		
Age 25-34	0.048	-0.242***
	(0.053)	(0.054)
Age 35-44	-0.129*	-0.511***
	(0.053)	(0.054)
Age 45-54	-0.288***	-0.647***
	(0.056)	(0.056)
Age 55-64	-0.149*	-0.476***
	(0.058)	(0.058)
Age 65-74	0.077	-0.165*
	(0.069)	(0.069)
Age 75-84	-0.032	-0.171*
	(0.082)	(0.082)
Age 25-34 * social variable	-0.071	-0.106
	(0.061)	(0.060)
Age 35-44 * social variable	0.023	-0.038
	(0.059)	(0.059)
Age 45-54 * social variable	0.163**	0.095
	(0.063)	(0.062)
Age 55-64 * social variable	0.133*	0.077
	(0.064)	(0.063)
Age 65-74 * social variable	0.060	0.005
	(0.075)	(0.074)
Age 75-84 * social variable	0.154	0.137
	(0.089)	(0.088)
Social variable	0.717***	0.711***
	(0.047)	(0.047)

Male		-0.075***
		(0.013)
Married		0.539***
		(0.017)
Marital status not reported		0.217
		(0.348)
Highest education:		
High schoool graduate		-0.022
		(0.023)
Some postsecondary		-0.008
		(0.023)
University graduate		0.065**
		(0.024)
Education not reported		-0.185*
		(0.084)
Annual household income:		
0 - $20,000		-0.544***
		(0.035)
$20,000 - $39,999		-0.280***
		(0.024)
$40,000 - $59,999		-0.075***
		(0.023)
$60,000 - $79,999		-0.008
		(0.023)
$80,000 - $99,999		0.041
		(0.025)
$100,000 - $119,999		0.159***
		(0.021)
Survey cycle fixed effects	Yes	Yes
Province fixed effects	Yes	Yes
Constant	7.669***	7.770***
	(0.050)	(0.054)
Observations	101,458	101,458

Adjusted R-squared	0.057	0.092

Notes: Robust standard errors in parentheses.
Two-tailed significances indicated by asterisks:
***$p<0.001$, **$p<0.01$, *$p<0.05$.

Table 10. Regression results for satisfaction with life, Canadian Community Health Survey

Social context variable:	(1) Age group only	(2) Belonging no controls	(3) Belonging, with controls
Associated figure:			Fig. 16
Age 25-29	-0.127*** (0.018)	-0.011 (0.030)	-0.223*** (0.030)
Age 30-34	-0.118*** (0.021)	-0.024 (0.036)	-0.339*** (0.035)
Age 35-39	-0.174*** (0.020)	-0.173*** (0.036)	-0.523*** (0.036)
Age 40-44	-0.280*** (0.022)	-0.349*** (0.044)	-0.678*** (0.043)
Age 45-49	-0.349*** (0.025)	-0.387*** (0.044)	-0.724*** (0.044)
Age 50-54	-0.331*** (0.024)	-0.341*** (0.040)	-0.681*** (0.038)
Age 55-59	-0.265*** (0.021)	-0.363*** (0.039)	-0.657*** (0.038)
Age 60-64	-0.217*** (0.020)	-0.275*** (0.036)	-0.516*** (0.036)
Age 65-69	-0.133*** (0.019)	-0.333*** (0.039)	-0.485*** (0.039)
Age 70-74	-0.140*** (0.021)	-0.274*** (0.044)	-0.399*** (0.044)
Age 75-79	-0.257*** (0.024)	-0.622*** (0.062)	-0.693*** (0.063)
Age 80+	-0.391*** (0.022)	-0.786*** (0.053)	-0.743*** (0.053)
Age 25-29 * Strong belonging		-0.080* (0.038)	-0.078* (0.037)

Age 30-34	-0.067	-0.081
* Strong belonging	(0.043)	(0.042)
Age 35-39	0.037	-0.004
* Strong belonging	(0.042)	(0.041)
Age 40-44	0.129*	0.067
* Strong belonging	(0.050)	(0.049)
Age 45-49	0.075	0.036
* Strong belonging	(0.054)	(0.053)
Age 50-54	0.050	0.031
* Strong belonging	(0.049)	(0.046)
	0.164***	0.119**
Age 55-59	(0.045)	(0.044)
* Strong belonging		
	0.080	0.054
Age 60-64	(0.043)	(0.042)
* Strong belonging		
	0.253***	0.206***
Age 65-69	(0.044)	(0.043)
* Strong belonging		
	0.136**	0.124*
Age 70-74	(0.050)	(0.049)
* Strong belonging		
	0.419***	0.415***
Age 75-79	(0.067)	(0.066)
* Strong belonging		
	0.504***	0.501***
Age 80+	(0.058)	(0.057)
* Strong belonging		
	0.585***	0.559***
Strong belonging	(0.021)	(0.021)
		-0.106***
Male		(0.010)
		0.397***
Married		(0.012)
Marital status not reported		-0.084
		(0.116)

Highest education:

Secondary graduate			-0.024
			(0.018)
Other secondary			-0.069**
			(0.022)
Postsecondary graduate			0.061***
			(0.015)
Education not reported			0.077*
			(0.031)
Annual household income			
$20,000 - $39,999			0.339***
			(0.025)
$40,000 - $59,999			0.577***
			(0.024)
$60,000 - $79,999			0.721***
			(0.025)
$80,000+			0.924***
			(0.024)
Income not reported			0.634***
			(0.036)
Survey cycle fixed effects	No	Yes	Yes
Province fixed effects	No	Yes	Yes
Constant	8.190***	7.939***	7.346***
	(0.009)	(0.030)	(0.037)
Observations	425,662	419,533	419,533
R-squared	0.006	0.046	0.097

Notes: Robust standard errors in parentheses. Two-tailed significances indicated by asterisks: ***p<0.001, **p<0.01, *p<0.05.