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GENDER AND LIFE SATISFACTION IN THE UK

Marina Della Giusta, Sarah Louise Jewell, and Uma S. Kambhampati

ABSTRACT

This contribution analyzes the variations in reported life satisfaction for men and women in the United Kingdom. While average levels of life satisfaction are similar for men and women, the variations in life satisfaction are more marked for women. Analyzing the British Household Panel Survey (BHPS) for 1996–2007, the paper finds that hours of paid work increase life satisfaction for both men and women, while housework hours are statistically significant only for retired men and women. Childcare (for children ages 3 to 4 years) and caring for adults affect women's life satisfaction negatively but are statistically insignificant for men. Some of these differences might be explained by the fact that women and men in the sample assign differing weights to satisfaction with different life dimensions. Job satisfaction, in particular, matters much more to men than to women.

KEYWORDS

Gender, preferences, self-reported well-being, happiness

JEL codes: D01, D12, D13

INTRODUCTION

The literature on life satisfaction and happiness has addressed gender in a somewhat ad-hoc fashion. Although the variable sex is present in most studies, few attempts have been made to systematically test gender-based explanations for observed differences in well-being and in happiness levels. This paper attempts to do this in two ways. First, we analyze the factors influencing life satisfaction, concentrating in particular on the role played by different patterns of work – both paid and unpaid – undertaken by men and women. Second, we consider the components of life satisfaction by examining individuals' satisfaction with various aspects of their life: work, partner, home, income, leisure, health, and social life. Our analysis is based on data from the British Household Panel Survey (BHPS), which covers the period 1996–2007 and provides information on life satisfaction in all those years (except 2001).

LITERATURE REVIEW

There is considerable disagreement in the literature regarding whether women report higher or lower levels of well-being than men. While some cross-country studies have found women to be happier than men (Rafael Di Tella, Robert J. MacCulloch, and Andrew J. Oswald 2003; Richard A. Easterlin 2003; David G. Blanchflower and Andrew J. Oswald 2004), others find gender to be uncorrelated with levels of self-reported happiness (Daniel Kahneman and Alan B. Krueger 2006), and yet others find that women are less happy than men (Daniel K. Mroczek and Christian M. Kolarz 1998). To some extent, this might be related to the measures being used. Thus, in a recent review of the literature, Paul Dolan, Tessa Peasgood, and Mathew White (2008) find that women tend to report higher happiness (Alberto Alesina, Rafael Di Tella, and Robert MacCulloch 2004) but show worse scores on the happiness questions included in the General Health Questionnaire (Andrew E. Clark and Andrew J. Oswald 1994). In this context, Bruno S. Frey and Alois Stutzer (2002) argue that women may have a higher tendency to report both being very happy and very unhappy. This may be due to either their higher capacity for emotions or their greater expressivity of them (Wendy Wood, Nancy Rhodes, and Melanie Whelan 1989).

Analyzing the other factors influencing life satisfaction, many researchers find that external environment, personal circumstances, and personality are all important (Frey and Stutzer 2002; Richard Layard 2006). They also find that the gender effect often disappears when examining specific subgroups of the population, as for example those who cannot participate in paid work due to health problems (Andrew J. Oswald and Nattavudh Powdthavee 2008) or those who provide informal care for others (Dolan, Peasgood, and White 2008). Enrico A. Marcelli and Richard A. Easterlin (2005) also find that happiness varies across the life cycle, rising for men and declining for women over the adult life cycle. Blanchflower and Oswald (2004) and Frey and Stutzer (2002), on the other hand, find a U-shaped pattern across the life cycle. More recently, Betsey Stevenson and Justin Wolfers (2009) identify a falling trend since the 1970s in women's subjective well-being across industrialized countries, both in absolute terms and relative to men's. They put forward a set of possible explanations: the fact that women's life satisfaction has become harder to achieve, with aspirations across multiple and possibly conflicting domains; the rise in their aspirations and the possible concomitant change in reference groups; and wider socioeconomic forces that might have gender-biased impacts such as decreased social cohesion, increased anxiety and neuroticism, and increased household risk.

The way people use their time is at the center of the most recent methods for measuring subjective well-being (Matthew P. White and Paul Dolan

2009). Such methods have also been used by Mariachiara Di Cesare and Alessia Amori (2006), who have studied the interaction between different roles (spouse, paid worker, parent) of men and women in Italy and their impact on overall happiness. They find that women's happiness is affected by educational level, marital status, and social interaction, while, rather than being dependent on multiple factors, men's happiness depends mainly on occupational status. Alison L. Booth and Jan C. van Ours (2008), on the other hand, using data from the BHPS, find that though paid working hours matter for job satisfaction, they do not matter for overall life satisfaction. Vanessa Gash, Antje Mertens, and Laura Romeu Gordo (2010), using both the German Socio-Economic Panel and the BHPS, find that decreases in paid working hours are associated with positive changes in happiness for women.

Thinking about happiness and gender

Although research into well-being and happiness has increased enormously in recent decades, feminist economists have tended to be skeptical about studies of happiness based on self-reported well-being. Given the recent drive to use such indicators in public policy (Layard 2006), however, it is important to provide a more thorough analysis of self-reported well-being from a gender perspective. Feminists have argued that human adaptation is such an innate quality that women might adapt to inequality and poor conditions and might claim to be happy (Amartya Sen 1999). Under these circumstances, self-reported measures of well-being would not look very different for men and women, even though they provide a poor indication of the true level of well-being of women. For feminist economists, level of happiness is not an absolute, objective measure and is certainly not one that can easily be compared across groups or even across individuals. Economists of this persuasion have argued that capabilities (which enable individuals to lead fulfilling lives) are more important than the happiness levels that women might explicitly express. Sen (1999), for instance, argues that a utility-based measure of well-being (such as happiness) can be misleading because a person may live in a desperate situation and still be content with her life if she has never known anything better. Thus, low expectations may drive higher expressed levels of life satisfaction or well-being. Agreeing with this view, Ingrid Robeyns therefore argues that we should focus on "what people are able to be and to do" (2003: 62).

While capabilities are clearly important as instruments that lead to a valuable, fulfilled life, well-being cannot be ignored. It is possible, for instance, for people to have identical capabilities and very different levels of well-being or to have identical well-being arising from different capabilities. Underemphasizing well-being implies downgrading the importance of the final outcome (well-being) as opposed to the means to this outcome

(capabilities). It also seems to imply that emotional well-being is seen as less important than capabilities. This implication goes against the arguments put forward by some feminist philosophers that emotions should be included in the capability framework (Martha C. Nussbaum 2000). Well-being measures go some way in dealing with this critique. Des Gasper (2007) has recently discussed the importance of felt well-being in the context of capabilities and has argued that Sen's framework needs to be enlarged to account for emotions in the context of care and felt well-being as an important indicator of human development.

If capabilities are seen as a step in the direction of well-being, then we could argue that the entire chain from resources \rightarrow capabilities \rightarrow well-being and life satisfaction is of interest. Well-being with no attention paid to capabilities would be hollow. Equally, since the end outcome we are interested in is well-being of individuals, then analyzing capabilities without considering their contribution to individuals' well-being is an incomplete approach. Within the capability framework, we would argue that men have more capabilities than women. Thus Robeyns argues that for "mental health, political empowerment, education and knowledge... leisure, time-autonomy, mobility, respect, and religion, the arguments and studies... suggest that women's well-being is less than men's" (2003: 86). While, as we have seen above, having more capabilities does not necessarily make people happier, it would certainly make them better able to function in a fully rounded manner; and this is likely to contribute to their life satisfaction. Finally, while we accept that adaptability exists and therefore women may express life satisfaction in the absence of these capabilities, we are not proposing to replace policies that enhance capabilities with policies for emotional well-being, but rather to complement them in order to give a fuller account of women's voices and preferences.

In the rest of this article, we will accept that well-being provides useful evidence regarding the final outcomes of individuals' lives. We will consider the differences in these well-being measures for men and women and analyze the factors that influence these differences. In particular, we will consider the role played by the activities undertaken by men and women, and the possibility that they have different constructs of well-being.

OUR STUDY AND VARIABLES

Our sample is drawn from the BHPS, a longitudinal study of around 5,500 households and over 10,000 individuals that began in 1991 and collects annual data on social and economic variables at the individual and household level.¹ The BHPS collects data on original panel members and subsequently on any new household members; it also follows original panel members to any new households. A booster sample of households from

Scotland and Wales was introduced in 1999 and from Northern Ireland in 2001. Overall, the sample size increases to over 10,000 individuals in later waves. The BHPS provides information on life satisfaction and time use, as well as on many socioeconomic and attitudinal variables. We utilize BHPS data over the period 1996–2007, including any individual with at least 2 years of consecutive full interview data, noting that the life satisfaction question was not asked in 2001. There are 22,637 individuals in the panel with an average of 7 years' worth of data (there is a minimum of 2 years and a maximum of 11 years), which leads to 145,809 person-year observations, which will be reduced when missing values on particular variables are taken into account or when we examine particular groups.

As mentioned, respondents were not asked for their life satisfaction in 2001, and we exclude this year from our analysis. We generally exclude retired individuals, since we find that retired individuals have statistically significantly higher life satisfaction (an average of 5.50 for retired women compared with 5.15 for non-retired women and an average of 5.56 for retired men versus 5.16 for non-retired men). We would also expect time-use behavior (particularly hours provided in the labor market) to be different. Having said this, we include retired individuals in our later estimates for completeness and also because they provide a sensitivity check.

Life satisfaction in the BHPS is measured by asking: “How satisfied or dissatisfied are you with your life overall?” Answers are provided along a 7-point scale, with 1 being not satisfied at all and 7 being completely satisfied. The 7-point scale assumes that each point is equidistant from the one before and after it. In reality, of course, for subjective measures of this kind, this assumption need not be true: 5 may be further from 4 than it is from 6, for instance. This situation has generally been dealt with by using ordered probit (OP) estimation methods. However, the OP method does not allow us to exploit the panel nature of our data. In this context, there seems to be some consensus that whether a life-satisfaction dependent variable is treated as continuous or as an ordered variable makes little difference to results, but controlling for fixed effects is important (Ada Ferrer-i-Carbonell and Paul Frijters 2004; Andrew E. Clark, Ed Diener, Yannis Georgellis, and Richard E. Lucas 2008; Gulcin Menteshoglu and Maarten Vendrik 2009; Claudia Senik 2009). Fixed effects are able to allow for personality, which is increasingly being accepted as playing a large part in an individual's well-being. Even though a random-effects model may provide a more efficient approach, it assumes that explanatory variables are not correlated with the individual fixed effect. However, we know that some variables – such as living with a spouse or partner, time use, or having children – could be correlated with the unobserved time-invariant individual effect. This unobserved individual effect may encompass factors such as personality, attitudes, and preferences, which

need to be controlled for. We begin by estimating our model using four methods: pooled OLS, OP, fixed effects, and random effects. Comparing our results across all of these methods, we conclude that the fixed-effects methodology is more appropriate than any of the others. Therefore, most of our later estimations concentrate on this method.

In our sample of non-retired individuals, men and women both have an average satisfaction of 5.16. However, women tend to have a slightly higher standard deviation (1.3) in their average life satisfaction values than men (1.22). A chi-squared test confirms that the distribution of life satisfaction for men is statistically significantly different from that for women. This greater variation is brought about by more women being in the lower categories, as shown in Appendix 1: an average of 10.4 percent of women across the time period report values of 1 to 3 compared with 9.6 percent of men, and more women (12 percent) are also in the top category of 7 than men (9.6 percent). Thus, our summary statistics seem to confirm Frey and Stutzer's (2002) finding that women have a higher tendency to report being both very happy and very unhappy. Thus, while average life satisfaction of men and women is very similar, the variation in life satisfaction across the genders is statistically significant. Across the years, there is a slight fall in life satisfaction from 5.19 to 5.17 for men and from 5.15 to 5.13 for women, but this decrease is significant only at the 10 percent level for women and not significant for men. There is no statistically significant difference between men's and women's overall life satisfaction in any of the waves. In what follows, we will analyze the factors influencing life satisfaction of men and women in more detail. Before we consider the model in more detail, it is worth discussing the issue of endogeneity, which affects many studies of this kind.

A note on endogeneity

One of the issues that affects all work on life satisfaction is the extent of endogeneity that exists in the independent variables. In our model, for instance, there may well be endogeneity between life satisfaction and earnings, employment, or even marital status. Thus, an individual might be happier because they are employed or married, but happier individuals may be more likely to be employed or married. Endogeneity in our model arises from two (or possibly three) factors. First, endogeneity might arise because there is a factor (such as individual personality) that is omitted from our estimation but is accepted as having an impact on life satisfaction (Ferrer-i-Carbonell and Frijters 2004; Christopher J. Boyce 2010). Second, endogeneity might arise because of simultaneity in the way described above, with employment or marital status affecting life satisfaction and vice versa. A third possible factor might be error in measuring some of our variables – in particular, the time-allocation variables. Endogeneity of this

kind will lead to biased estimates for those variables correlated with the omitted factors. In this paper, we correct for endogeneity arising from the first factor but not the second. To correct for endogeneity arising from the omission of personality in the model, we exploit the panel nature of our data and estimate the model using fixed effects. These fixed effects allow us to control for personality effects (Ferrer-i-Carbonell and Frijters 2004). Correcting for endogeneity arising from simultaneity requires us to use instruments for the endogenous variables. Such instruments need to be strongly correlated with the endogenous variable but not correlated with our dependent variable, life satisfaction. Using weak instruments could compound our problems, since the instruments will be poor predictors of the instrumented variable and therefore could further bias our coefficients. In the absence of credible instruments, we have decided not to correct for this.

Variables included

A list of our variables and their definitions is provided in Appendix 2 and means and standard deviations of the main variables used in our regressions are provided in Table 1 (with the descriptive statistics including retired individuals provided in Appendix 3), by gender.

Personal characteristics

We begin by including a number of personal characteristics including age, whether the individual lives with a spouse or partner, and whether the spouse or partner is employed. Time-invariant variables such as gender, ethnicity, and religion (very few people changed their religion during our sample period) cannot be included in the fixed-effects model but we are able to include them in random effects and OP models, which have been estimated for comparison purposes. Around 53 percent of individuals in our regressions are women, 97 percent are white, and approximately 38 percent are Christian. Our summary statistics indicate that the average age of both genders is approximately 38 years in 1996 and increases in subsequent years. However, the average age increases to 46 for women and 45 for men if we include retired individuals.

Education

The impact of education on well-being is uncertain. On the one hand, education increases the capabilities of individuals. Insofar as it is important for us to consider both the capabilities and well-being of individuals to obtain an overall picture of their well-being, the individual's education is a crucial variable. In this context, education is likely to increase the

Table 1 Means and standard deviations of main regression variables by gender

Variable	Women		Men	
	Mean	SD	Mean	SD
Life satisfaction	5.16	1.29	5.16	1.21
<i>Personal characteristics</i>				
White	0.97	0.18	0.96	0.18
Non-religious	0.40	0.49	0.51	0.50
Christian	0.42	0.49	0.33	0.47
Catholic	0.13	0.33	0.10	0.30
Other religion	0.06	0.23	0.06	0.23
<i>Age group</i>				
16–20	0.10	0.30	0.10	0.30
21–24	0.08	0.26	0.08	0.27
25–34	0.23	0.42	0.22	0.42
35–49	0.36	0.48	0.35	0.48
50+	0.24	0.42	0.24	0.43
<i>Marital status</i>				
Married living with spouse	0.53	0.50	0.53	0.50
Cohabiting	0.14	0.35	0.14	0.35
Divorced or separated	0.09	0.29	0.06	0.23
Widowed	0.02	0.15	0.01	0.08
Single and never married	0.21	0.41	0.26	0.44
<i>Spouse or partner employed</i>	0.57	0.50	0.49	0.50
<i>Education</i>				
University education	0.14	0.35	0.15	0.36
No qualifications	0.16	0.37	0.14	0.35
<i>Income</i>				
Log (household income)	9.34	0.81	9.39	0.86
<i>Labor market status</i>				
Employed	0.68	0.47	0.81	0.39
Unemployed	0.03	0.17	0.05	0.22
Family care	0.16	0.37	0.01	0.08
Education or training	0.07	0.26	0.07	0.25
Sick or disabled	0.05	0.22	0.06	0.23
Other	0.01	0.08	0.005	0.07
<i>Paid hours worked per week</i>	23.18	18.32	37.04	19.94
<i>Housework hours per week</i>	14.63	11.23	5.23	5.56
<i>Time spent caring</i>				
No caring	0.82	0.38	0.87	0.34
0–9 hours per week	0.10	0.30	0.09	0.28
10–34 hours per week	0.04	0.20	0.03	0.16
35+ hours per week	0.03	0.17	0.02	0.13
<i>Number of children</i>				
No children under 16	0.60	0.49	0.67	0.47
Number ages 0–2	0.09	0.30	0.08	0.28
Number ages 3–4	0.08	0.29	0.07	0.27
Number ages 5–11	0.36	0.71	0.31	0.67
Number ages 12–15	0.18	0.47	0.15	0.43
<i>No. of obs.</i>	55,800		48,747	

well-being of individuals by increasing their capabilities. On the other hand, however, a number of studies have found that better-educated people are less happy (Frey and Stutzer 2002). This might be because education actually increases exposure to the world and therefore could heighten our awareness of what we lack. Thus, the impact of education is not clear a priori. 16 percent of women in our sample and 14 percent of men have no qualifications, while 14 percent of women and 15 percent of men have been to university.²

Household income

The literature on the impact that household income may have on individual well-being is very large and its findings vary based on the sample, time period, and methodology used. Previous studies generally seem to accept that income has a positive impact on well-being up to a point but that, after this point, more income is no longer associated with more happiness (Blanchflower and Oswald 2004; Ferrer-i-Carbonell and Frijters 2004). This, of course, is not surprising and is picking up the decreasing marginal utility of income. We include the log of annual household income (adjusted for the number of adults in the household) with an average of 9.39 for men and 9.34 for women.

Relative income

In addition to the impact that household income may have on the life satisfaction of individuals living within the household, their own contribution to this income is also likely to be important, for a number of reasons. While absolute income measures the material benefits that income might bring, relative income can reflect the bargaining power of the contributors; that is, while the former determines the size of the pie, the latter determines how the pie might be divided within the household. There is, of course, a large body of literature on intrahousehold bargaining and whether households pool income and if they do not, whether the relative incomes of household members affect their ability to influence household expenditure (John Hoddinott and Lawrence Haddad 1995; Cheryl R. Doss 1996). In this study, we include a share of household income variable in our model to analyze whether this will increase or decrease the individual's life satisfaction. It is possible, for instance, that a woman who earns more than her male partner has greater control over household expenditure. However, she might also be affected by social norms that dictate that men should earn more than women. It is unclear a priori which effect will dominate. We do not include this variable in all our models because including it requires us to restrict the sample to those individuals with partners or spouses. Since we did not wish to limit the sample of the

entire analysis in this way, we estimated a model including this variable separately (see Table 2).

Living with a spouse or partner

Most studies accept that individuals living with a spouse or partner are likely to be happier than those who live alone (Alois Stutzer and Bruno S. Frey 2006). However, as mentioned above, the causality in this relationship is not clear. It is possible, for instance, that happier individuals are those who are able to sustain happy, stable relationships. This possible endogeneity should be controlled with the use of a fixed-effects approach, which controls for individual personality differences (see discussion of endogeneity above). While approximately 67 percent of both women and men live with a spouse or partner, 57 percent of women live with a spouse or partner who is employed, whereas this is the case only for 49 percent of men. We divide those living with a spouse or partner into married and cohabiting and those who live without a partner into widowed, divorced or separated, and single and never married.

Activities undertaken

Our estimation also considers the impact that the activities being undertaken by men and women have on their respective life satisfaction. The main activities we are concerned with are labor market status (employed, unemployed, nonemployed) and hours of paid work, housework hours, childcare undertaken, and adult care. Of course, it is not always easy to separate housework from childcare and adult care. Thus, cooking a meal may be categorized as housework or may be part of childcare. The same may be true of doing the laundry in a household with children.

The extent to which men and women have different hours of work – paid and unpaid – has been a matter for much research and debate. The amount of time spent on housework has been modeled through the economic exchange model, which sees this as an outcome of bargaining and therefore dependent on the power balance of the two parties. It is assumed that this power balance in turn is reflected in the share of the couple’s earnings: the greater the share, the smaller the amount of time devoted to housework. The alternative view, however, argues that gender norms influence the extent to which the partners undertake housework. In this case, it is argued that women may overcompensate for an unusually high share of a couple’s income with unusually high (rather than low) amounts of housework. Thus, women who earn a lot more than their male partners may “compensate” by doing more housework (Sanjiv Gupta 2006).

Nancy Folbre, Jayoung Yoon, Kade Finnoff, and Allison Sidle Fuligni (2004) also find that the time mothers spend in activities with children

Table 2 Fixed-effects life satisfaction regressions by gender

	Excluding retired		Including retired		Including relative income	
	Women	Men	Women	Men	Women	Men
<i>Personal characteristics</i>						
<i>Age group (ref: 35–49)</i>						
16–20	0.119** [0.053]	0.255*** [0.053]	0.026 [0.052]	0.191*** [0.053]	-0.007 [0.085]	0.360*** [0.121]
21–24	0.039 [0.040]	0.017 [0.042]	-0.031 [0.039]	-0.03 [0.041]	0.03 [0.048]	0.028 [0.058]
25–34	0.043* [0.024]	0.042 [0.026]	0.006 [0.024]	0.017 [0.026]	0.046* [0.026]	0.061*** [0.028]
50+	0.013 [0.028]	0.077*** [0.027]			0.027 [0.029]	0.087*** [0.028]
50–64			0.043 [0.027]	0.105*** [0.027]		
65+			0.067 [0.044]	0.216*** [0.043]		
<i>Marital status (ref: single and never married)^a</i>						
Married and living with spouse						
	0.016 [0.045]	0.108** [0.043]	0.095** [0.042]	0.136*** [0.042]	-0.019 [0.032]	-0.015 [0.031]
Cohabiting						
	0.016 [0.039]	0.131*** [0.037]	0.088** [0.037]	0.144*** [0.036]		
Divorced or separated						
	-0.111** [0.052]	-0.221*** [0.057]	-0.131*** [0.050]	-0.220*** [0.055]		
Widowed						
	-0.410*** [0.109]	-0.302** [0.144]	-0.378*** [0.068]	-0.179** [0.085]		
Spouse or partner employed						
	0.134*** [0.029]	0.027 [0.020]	0.056** [0.025]	0.02 [0.018]	0.120*** [0.031]	0.01 [0.021]

(continued)

Table 2 (Continued)

	Excluding retired		Including retired		Including relative income	
	Women	Men	Women	Men	Women	Men
<i>Education</i>						
University education	-0.015 [0.040]	-0.058 [0.047]	0.007 [0.040]	-0.038 [0.046]	0.0002 [0.065]	0.006 [0.077]
No qualifications	0.03 [0.052]	-0.01 [0.051]	0.00004 [0.052]	-0.027 [0.050]	0.081 [0.076]	-0.08 [0.065]
<i>Income</i>						
Log (household income)	0.020** [0.008]	0.019** [0.008]	0.015** [0.007]	0.013* [0.007]	0.032** [0.015]	0.039** [0.016]
Share of household income					-0.011 [0.045]	0.022 [0.042]
<i>Paid hours worked per week</i>						
Total hours employed/10	0.034*** [0.013]	0.021* [0.012]	0.029** [0.012]	0.013 [0.011]	0.021 [0.017]	0.025 [0.018]
Total hours employed/10 squared	-0.005** [0.002]	-0.001 [0.001]	-0.005** [0.002]	-0.001 [0.001]	-0.004 [0.003]	-0.002 [0.002]
Unemployed	-0.231*** [0.036]	-0.363*** [0.039]	-0.234*** [0.035]	-0.344*** [0.038]	-0.134*** [0.049]	-0.305*** [0.061]
Sick or disabled	-0.461*** [0.047]	-0.754*** [0.067]	-0.389*** [0.042]	-0.553*** [0.055]	-0.394*** [0.062]	-0.708*** [0.089]
Retired			0.055** [0.026]	-0.015 [0.040]		
<i>House work hours per week</i>	-0.001 [0.007]	0.015 [0.014]	0.016*** [0.006]	0.026** [0.011]	-0.007 [0.008]	0.025 [0.017]
<i>Time spent caring (ref: No caring)</i>						
0–9 hours per week	-0.014 [0.018]	0.017 [0.019]	-0.009 [0.015]	0.028* [0.016]	-0.022 [0.020]	-0.007 [0.020]

(continued)

Table 2 (Continued)

	Excluding retired		Including retired		Including relative income	
	Women	Men	Women	Men	Women	Men
10–34 hours per week	-0.028 [0.028]	-0.014 [0.036]	-0.037 [0.024]	-0.001 [0.029]	-0.037 [0.032]	-0.036 [0.040]
35+ hours per week	-0.132*** [0.045]	-0.051 [0.064]	-0.193*** [0.037]	-0.119** [0.048]	-0.173*** [0.051]	-0.053 [0.068]
<i>Number of children</i>						
Number ages 0–2	0.011 [0.020]	0.018 [0.020]	-0.006 [0.020]	0.011 [0.020]	0.014 [0.022]	0.009 [0.020]
Number ages 3–4	-0.043** [0.019]	-0.022 [0.020]	-0.059*** [0.019]	-0.029 [0.021]	-0.054*** [0.021]	-0.019 [0.021]
Number ages 5–11	-0.007 [0.014]	0.006 [0.014]	-0.015 [0.013]	0.004 [0.014]	0.007 [0.015]	0.005 [0.015]
Number ages 12–15	0.006 [0.016]	-0.01 [0.016]	0.002 [0.016]	-0.009 [0.016]	0.01 [0.017]	-0.006 [0.017]
<i>Constant</i>	4.921*** [0.118]	4.765*** [0.119]	5.105*** [0.108]	4.958*** [0.111]	5.162*** [0.190]	4.768*** [0.183]
Observations	55,800	48,747	72,639	60,884	37,434	32,749
Number of individuals	9,399	8,250	11,507	9,829	6,654	5,771
rho	0.554	0.556	0.554	0.562	0.589	0.589
(pseudo) <i>r</i> -squared	0.05	0.08	0.03	0.07	0.01	0.05
Hausman test of FE vs RE	661.8***	301.7***	865.1***	496.6***	540.2***	245.5***
Chow test	2.87***		2.22***		2.64***	

Notes: Robust standard errors in brackets. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Includes wave and region dummies.

^aWhen only those with a partner are included, the reference category is cohabiting.

changes relatively little as they increase their hours of employment. While joint care (with both partners present) often reduces the stress generated by such activities, the pressures of multitasking imply that both partners are restricted to sequential care instead. This results in a shortage of time, which has been called time poverty by Tania Burchardt (2008). Burchardt, using the United Kingdom Time Use Survey, finds that only 44 percent of children are in households that are free of both time and income poverty. She also finds that men are less likely to experience both time and income poverty than women.

Labor market status and hours of work

It is expected that the more activities individuals are involved in and the longer the hours, the greater the stress they feel and the lower their levels of well-being. Thus, the literature suggests that the way in which men and women experience stress and the factors that cause it relate to competing demands upon their time (for example Martha MacDonald, Shelley Phipps, and Lynn Lethbridge [2005]). The majority of non-retired men (81 percent) and 68 percent of women are employed. Six percent of women undertake family care compared with only 1 percent of men, with 7 percent of both men and women in education or further training. Three percent of women are unemployed, compared with 5 percent of men. We include a continuous measure of market work hours, as well as market hours squared, to test for nonlinear effects. We also include dummy variables for unemployment or individuals unable to undertake paid work due to illness or a disability, since we consider these as involuntary choices (as opposed to being out of the labor market for reasons such as to undertake family care or education).

Household work

Data from time-use surveys show that women perform the majority of unpaid work in the household – on average, 53 percent more time than men (Hans G. Bloemen, Silvia Pasqua, and Elena G. F. Stancanelli 2008). Others have argued that there is evidence of iso-work (equal total amounts of work) for women and men (Michael Burda, Daniel S. Hamermesh, and Philippe Weil 2007). In a study of twenty-seven countries, Burda, Hamermesh, and Weil (2007) find that iso-work occurs in non-Catholic, rich countries but not in developing or Catholic, OECD ones. MacDonald, Phipps, and Lethbridge (2005) find that, in Canada, women's hours of unpaid work contribute to stress, and within these work hours, time spent on eldercare and housework is more stressful than that spent on childcare.

Women spent approximately 23 hours a week in paid work (which increases to 32 hours conditional on employment) and 15 hours in

housework, whereas men spent approximately 37 hours in paid work (44 hours conditional on employment) and 5 hours in housework. While the total amount of time spent by women in paid work and housework is not very different from that of men, these figures do not include childcare or care of other adults, as we will see below. Other surveys, including the Time Use Surveys, indicate that these activities are significantly much more likely to be undertaken by women than by men (Rania Antonopoulos 2008). The housework question does not explicitly include childcare but, in our sample, on average women in family care with children spend 26 hours a week on housework compared with 17 hours for those with children but working outside the home and 11 hours for women without children (excluding those who are retired). For men, employment status is a major factor in determining the number of hours they spend on housework; whether they have children makes little or no difference. Therefore, for women with children, it would be expected that housework hours correlate with childcare hours and may also overlap.

Unfortunately, the BHPS does not have information regarding the number of hours spent in childcare. We therefore include the number of children of particular ages (0–2, 3–4, 5–11, and 12–15) as a proxy for the amount of childcare that has to be undertaken within the household. Many researchers argue that this is not a very good measure because it does not specifically describe the kinds of activity caregivers are engaged in: for instance, it is possible that when caring for children adults are simply in the children's presence or may actually be directly engaged with other adults (for a discussion, see Folbre, Yoon, Finnoff, and Sidle Fuligni [2004]). Another problem with such a proxy is that it also includes the pleasure that results from having children. So, the coefficients would provide some information on the net effect (advantages versus disadvantages) that people experience from having children. One advantage with this measure instead of the hours of childcare undertaken is that it might more accurately reflect the stress related to worrying about children. In particular, as children grow older, especially within the 12–15 age group, it might no longer be the physical challenges of childcare that matter, but the emotional ones. In our sample, 67 percent of men and 60 percent of women had no children under the age of 16. For individuals with children under 16, on average women (men) have 0.22 (0.23) children ages 0–2 years; 0.21 (0.22) children ages 3–4 years; 0.91 (0.92) children ages 5–11; and 0.5 (0.44) children ages 12–15 years.

Caring for adults

In addition to caring for children, women are often overwhelmingly responsible for the care of other adults (Francesca Bettio, Annamaria Simonazzi, and Paola Villa 2006), which again impacts caregivers' time use

and well-being in terms of the other activities they can undertake and the relative satisfaction they get from them as well as from the caring itself.

The time-spent-caring variable measures the extent of involvement in other caring activities, such as caring for a sick, handicapped, or elderly relative either living in or outside of the household, excluding the day-to-day care of one's children. The majority of caregivers (71 percent) are doing so for someone outside the household and generally they care for relatives (83 percent) or friends (14 percent). Our prior expectation is that caring, whether for children or adults, is likely to decrease life satisfaction. Of course, there is the possibility that a certain amount of caring actually gives individuals a sense of self-worth, and if this is the case it will actually increase life satisfaction. The relationship may therefore not be linear. To allow for this, we divide this variable into hours of caring (0–9 hours, 10–34, 35 and over), with the base category being “no caring” at all. Our expectation is that beyond a certain number of hours, the individual's sense of self-worth diminishes and they feel the drudgery of the work. Ten percent of women and 9 percent of men are engaged in caring for sick, disabled, or elderly relatives for between 0 and 9 hours a week. 4 percent of women spend 10–34 hours and 3 percent spend more than 35 hours a week in caring activities; the figures are 3 percent and 2 percent for men, respectively.

RESULTS

We estimate the life satisfaction model using four different estimation methods – pooled OLS, OP, fixed, and random-effects methods. Appendix 4 provides the results for all four methods for the entire sample (across all years and including both men and women). Our results in Appendix 4 indicate that the sign and statistical significance of our results are not altered much by assuming the variable is a continuous dependent variable (because coefficients are not directly comparable across models), as seen in the OP and OLS model (with standard errors adjusted for individual clusters). We can therefore confirm that our results are not dependent on whether we treat life satisfaction as a cardinal or ordinal variable (as found by Ferrer-i-Carbonell and Frijters [2004]). Allowing for the panel structure of our sample, we then estimate both random and fixed-effects models and find that the random-effects approach is broadly similar to the pooled cross-sectional OLS model. However, there are substantial differences when we utilize a fixed-effects estimation method (using a within transformation). A Hausman test indicates that the fixed-effects approach is more appropriate, possibly because the unobserved individual fixed effect is correlated with the other explanatory variables. In particular, our fixed-effects results indicate that the effects of age, living with a spouse or partner (married or cohabiting), and income are reduced, while the effect

of being widowed becomes significant and larger. This might arise from the fact that some of these variables are picking up the effect of personality in the OLS and pooled-OLS estimations. In addition, having children becomes statistically insignificant (except in the case of children ages 3–4) and generally positive, which was also found by Ferrer-i-Carbonell and Frijters (2004). We therefore revert to a fixed-effects estimation (which makes use of the within transformation) for the rest of the analysis.

Are men and women different?

We estimate the fixed-effects model separately for men and women; the results are shown in Table 2. Individuals feature in our model if they have at least 2 years of data, the minimum required for our fixed-effects estimation (using a within-effects transformation). Although in the pooled random effects regression in Appendix 4 the gender variable is statistically insignificant, a Chow test demonstrates that there are systematic differences (see the last row of Table 2) between the coefficients of the two genders. This result implies that while there may be no significant difference in the level of life satisfaction across gender, there is a statistically significant difference in the factors determining life satisfaction across men and women. In what follows, therefore, we report the results separately by gender. Table 2 also compares results when retired individuals are included.

Table 2 indicates that there are some nonlinear effects of age, with individuals in the youngest category (age 16–20) being significantly happier and women in the 25–34 age group being marginally happier than the reference group (35–49 age group).³ Men 50 years and above are also happier, but women above 50 years are not significantly happier. Women who are married or cohabiting are not significantly happier than women who are not living with a spouse or partner and have never been married, while women who are divorced or separated, and especially those who are widowed, are less satisfied. In contrast, men who are married or cohabiting are happier and, like women, men who are divorced, separated, or widowed are less happy. Thus, our results indicate that, for women, it is not marriage per se that matters, but rather that post-marriage separation (for whatever reason) makes them less happy. For men, on the other hand, the results are clear: marriage or partnership makes them happier and a breakup of this partnership makes them unhappy. We also find that when the spouse or partner is employed, women are significantly more satisfied with their lives, but spousal or partner employment has no effect for men. Higher household income increases life satisfaction for both genders, this effect being slightly higher for women.

Turning to the activity variables, we note that both men and women have lower satisfaction when, either due to unemployment, sickness, or disability,

they are involuntarily out of the labor market. The base category here is the voluntarily nonemployed (which includes those in family care, students, etc.). This effect is extremely striking and consistent across samples, and is larger for men than for women. For those who are employed, life satisfaction initially increases with the number of hours of paid work. This is true for women in both the sample excluding retired women and in the one including them. For men, it is only true for the sample excluding retired men. (Hours of paid work are set to zero if respondents do not work for pay; otherwise, the total hours in paid work is used. It is possible for retired people to work some for pay.) This effect tapers off for women after a maximum of 34 hours. While Booth and van Ours (2008) found that being employed part time increased women's job satisfaction but not overall life satisfaction, we find that though women's life satisfaction increases with more employment hours, it does so at a decreasing rate. This could be an effect of the double responsibilities discussed in the time-use literature, and is found among others in Burchardt (2008) for the UK and, for Canada, MacDonald, Phipps, and Lethbridge (2005).

Housework hours, on the other hand, do not improve the life satisfaction of either group significantly. There nevertheless does seem to be some evidence that men in particular, but also possibly women, find "the marginal minute spent in an office dealing with recalcitrant colleagues and demanding supervisors more pleasurable than the marginal minute spent shopping, cooking, or taking care of children" (Marybeth Mattingly and Suzanne Bianchi 2003: 26). It is worth mentioning, however, that data from the Harmonised European Time Use Survey (2007) indicate that the UK is fifth from the bottom in total hours of housework for both men and women, which may account for its lack of impact.

Table 2 also indicates that small amounts of caring do not significantly influence individual life satisfaction. However, when women spend more than 35 hours a week on caring activities, they experience a statistically significant negative impact on life satisfaction. There continues to be no significant impact for men, which might be because women are statistically significantly more involved in caring than men (Table 1). A chi-squared test (value 529.21) confirms that this distribution varies significantly by gender. Our results are therefore not surprising.

Finally, we find that, after controlling for unobserved fixed effects, having children generally has no statistically significant effect (as found by Ferrer-i-Carbonell and Frijters [2004]) for either gender, with the exception of children ages 3–4. Women with children ages 3–4 are less satisfied than those with no children. This might be because the advantages of having children offset the disadvantages in all other categories, leaving individuals not feeling any better off. It is only when women have children ages 3–4 that life satisfaction decreases, indicating that the extra work and stress involved in caring for children of this age are not offset by the benefits that

accrue to these women from such caring. Furthermore, having a greater number of children in this age group significantly decreases life satisfaction for women.

While these results are interesting in themselves, they generate some questions as far as the women are concerned. Why are women happier when their spouse is employed, yet this effect is not significant for men?⁴ Is it because the employment of their spouses increases women's economic security? Or because men's employment (or lack thereof) does not affect housework done, whereas women's employment is likely to decrease the amount of unpaid work they undertake around the house? All of these effects may be due to a combination of the different roles women perform and the different expectations they have of paid and unpaid work. Employed women without children under 12 are happiest with an average score of 5.27, followed by employed women with children under 12 (5.23). Women without a job (excluding retired women) are less satisfied (an average of 4.86 for women with children under 12 and 4.90 for women without children under 12).⁵ In comparison, men have an average satisfaction score of 5.16, which is not altered by whether or not they have children. These findings suggest that – regardless of children – women are happier when they have a job. We address the possible effect of expectations below.

Columns 3 and 4 in Table 2 provide results for the total sample of men and women, including retired individuals. It might be worth considering these results briefly. Our results indicate that the retired indicator is statistically significant for women but not for men. Thus, retired women are happier than the base category (voluntarily nonemployed women), but retired men are not significantly more satisfied. Being married or cohabiting now makes women happier, and the effect of having a partner or spouse employed is reduced for women. This might well be because they now have more time with their partners. Especially for men, the effect of income is reduced. For both men and women in this sample, housework hours become positively significant, indicating that, although housework increases life satisfaction for the retired, it has no impact on life satisfaction for working-age individuals. This might be because while housework is a chore for working individuals, for those who have retired and have more time it becomes a source of pleasure.

We now turn to the sample of women who live with a spouse or partner (and are not retired). For this group, we also analyze the impact of relative income on life satisfaction (in column 5 of Table 2). Relative income is the share of total household income (meaning their total income divided by total household income) contributed by the individual. On average, women contribute 34 percent of household income compared with 61 percent for men. The share of household income is not statistically significant for women.⁶ This might be because women with a greater share of income may

have more control over household expenditure, but may also be negatively affected by social norms that dictate that men should be the main contributors to household income.

There are also some differences in the regression coefficients for women who live with a spouse or partner. For example, the effect of market hours is now statistically insignificant and the effect of income is increased.

LIFE SATISFACTION

So far, we have found that even if overall life satisfaction levels are similar for women and men, the effect on life satisfaction of the different activities they perform (paid work, housework, adult care, and childcare) is systematically different. This seems to imply that men and women gain life satisfaction from different things. One reason for this may be that life satisfaction is dependent upon different aspects for men versus women. Thus, gendered patterns of socialization of women and men result in different specializations and different expectations and worldviews. Given that our sample includes information on the satisfaction that respondents derive from different life domains, we propose addressing this question by analyzing whether there is a systematic gender difference in the components of life satisfaction – satisfaction with job, home, health, income, partner, leisure, and social life. In addition to asking individuals to rate their overall life satisfaction on a scale of 1 to 7, individuals in the BHPS are asked, where applicable, to rate various aspects of their lives. These aspects include health, income, house, partner, job, social life, leisure time, and use of leisure time. Table 3 shows the average scores for men's and women's satisfaction with different dimensions of their lives. Men have statistically significantly higher scores on all life dimensions except for their satisfaction with their job. For both men and women, satisfaction is highest for partner, house, and health, and lowest for income and leisure time. Though there appears to be no difference across overall life satisfaction, men tend to have higher satisfaction on almost all the components, which suggests there are factors important to women that may be missing (see Stevenson and Wolfers [2009]).

We use factor analysis to assess the importance of satisfaction with different life dimensions in overall life satisfaction: this amounts to assuming that life satisfaction is a latent variable with different components that are captured across a variety of domains (the dimensions of life satisfaction), and what we want to ascertain is whether these components differ between men and women (those who do not have a partner or job are not included in this analysis) in terms of the relative importance attributed to different life dimension as well as the ways in which they combine.⁷ The technique aims at explaining the covariance structure of the variables, assuming the existence of a statistical model that

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Table 3 Average life dimension satisfaction scores by gender

	Women			Men		
	Obs.	Mean	SD	Obs.	Mean	SD
<i>Overall</i>	60,232	5.15	1.30	51,920	5.16	1.22
<i>Components</i>						
Health	60,427	4.95	1.60	52,080	5.09***	1.51
Income of household	60,323	4.48	1.59	51,998	4.52***	1.52
House or apartment	60,321	5.26	1.48	51,903	5.30***	1.38
Spouse or partner	44,639	6.11	1.28	38,968	6.23***	1.17
Job	43,613	5.05	1.44	43,588	4.98***	1.43
Social life	60,308	4.83	1.52	51,997	4.92***	1.41
Amount of leisure time	60,312	4.51	1.58	52,002	4.57***	1.54
Use of leisure time	60,306	4.65	1.55	51,989	4.82***	1.45

Notes: *** denotes statistical significance at the 1 percent level; *t* tests of difference by gender.

explicitly takes errors into account and posits that, given n variables, there are m underlying factors and each observed variable is a linear function of these common factors – each weighted with a factor loading (the loading of the variable on the factor) and a residual. The method used here is the principal components one, which uses the original correlation matrix assuming that there are 1s on its diagonal (the communalities) and extracts factors that are accounting for less and less variance of the underlying latent variable. The benefits associated with this method are related to the fact that it does not identify causalities, since it is based on identifying underlying correlation patterns among variables. The shortcomings are associated with the discretion involved in interpreting the factors.

Preliminary tests indicate that factor analysis is a good model for our data: we use principal-component analysis and obtain quite clearly separated loadings of each variable on the components extracted.⁸ This makes our interpretation relatively straightforward and confirms that women and men gain life satisfaction from different aspects of their life. Moreover, men’s overall life satisfaction is better accounted for by satisfaction with the life dimensions that are included in the BHPS. For women, there seems to be something missing that determines their life satisfaction. Our results are provided in Table 4 for men and women, with the factor loadings reported in Appendix 5. We focus on the individuals who rated all components, since the majority of individuals without a partner or job do not provide satisfaction levels for these. There was little change in the order of the other factors for those without a job or partner, but we comment on the minor differences.

The highest-ranking (most important) factor is leisure and social activities for both women and men. The second most important factor for women is house/income followed by partner, health, and then job. For

Table 4 Summary of main life satisfaction factors by gender

<i>Factors</i>	<i>Women</i>	<i>Men</i>
1	Social/leisure	Social/leisure
2	House/income	Job/income
3	Partner	House
4	Health	Partner
5	Job	Health
<i>No. of obs.</i>	33,566	34,559

men, job/income comes second and house and partner follow. Job satisfaction is more important to men's life satisfaction than to women's, in spite of their job satisfaction being similar. This may provide some explanation for the Booth and van Ours (2008) puzzle of part-time working women's job and life satisfaction: the former may well be high, but its importance in determining overall life satisfaction quite low. Satisfaction with one's partner is more important to women than men, which together with the different importance of spousal employment suggests that the partner's circumstances matter more to women (see also Marina Della Giusta, Sarah Louise Jewell, and Uma S. Kambhampati [2010]).

There are a few differences worthy of note for individuals without a job and/or a partner. For women without partners, job is the third most important factor, while employed single men rank job lower and house higher. Employed single women rank their job higher (which could be because they are less constrained and have better jobs, or because it is now their primary source of income). Conversely, having a partner but no job increases the importance of health. Finally, for all women, being responsible for children under 12 does not alter the results, but health becomes the least important factor for them. This suggests that, once they are parents, women's constraints and/or priorities change to the possible detriment of their health.

CONCLUSIONS

This article has analyzed the impact of gender on the life satisfaction of men and women. While gender has entered most studies of life satisfaction as a variable, few have considered how and why men and women experience differences in life satisfaction. We find that the average levels of life satisfaction are very similar for men and women. However, the distribution of life satisfaction is different, with the variation being higher for women. We then analyze two issues: are the factors that influence the life satisfaction of men and women different? How is this life satisfaction constructed with regard to satisfaction in different dimensions of life (paid work, health, social relations, house, etc.)?

Our analysis is based on the BHPS for the years 1998 to 2004 and our results indicate that both men's and women's life satisfaction is increased when in employment and life satisfaction increases with the number of paid hours worked, though this effect tapers off. In addition, though housework hours affect neither men nor women, both childcare (for 3- to 4-year-old children) and caring for adults affect only women negatively. Some of these differences might be explained by the fact that more women than men are engaged in child and adult care. It might also be caused by the fact that women and men give different weights to satisfaction with different life dimensions, as indicated in our factor analysis. Satisfaction with their job is much more important to men's life satisfaction than women's. In general, men's overall life satisfaction is better explained by satisfaction with the different life dimensions included in the data than is women's life satisfaction.

To date, studies have mostly prioritized mental health interventions and improvements in social contacts as ways to improve life satisfaction. Our findings further an understanding of other factors that might influence life satisfaction and therefore might be the focus of policies: it would, for instance, be necessary to consider how female caregivers might be assisted, or how governments might enhance provision for parents of preschool children. The impact of paid work on overall life satisfaction has been made less ambiguous: although men and women have similar levels of job satisfaction, the role that this plays in overall life satisfaction could be interpreted in two ways. On the one hand, it is possible that there is still some way to go to improve the labor market status of (and appeal to) women as well as conduct policies to overcome the strain of the double shift. Alternatively, it is possible that women have a better work-life balance and therefore while satisfaction with their job is important, it comes after many other factors that women see as more important.

Thus, it is clear that women and men may well have different preferences for public spending on the basis of the effect of different factors on their overall life satisfaction as well as on the importance of different life dimensions in their overall life satisfaction: priorities over spending for childcare and labor market policies may well be different among women and men based on their self-reported well-being and the actual constraints faced by employed, unemployed, and nonemployed caregivers of young children. Given the recent emphasis in policy circles on happiness indicators as alternative measures of social progress, we hope that our work will help to enlarge the feminist agenda of gender analyses of the outcomes of public policies to include systematic assessments of gender differences in self-reported well-being, as his happiness and hers may indeed mean quite different things.

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NOTES

- ¹ In the BHPS, a household is defined as one person living alone or a group of people who either share living accommodation or share one meal a day and who have the address as their only or main residence.
- ² The variable “no qualifications” includes those individuals who do not have any school-leaving qualifications, like the UK’s General Certificate of Secondary Education (GCSE) (taken when students are 16 years old).
- ³ In the discussion of results, the term “significant” is used to denote statistical significance.
- ⁴ Our sample includes same-sex couples, but we cannot identify them as the question on partner employment does not specify the sex of the partner.
- ⁵ Average overall life satisfaction is statistically significant across these four groups of women at the 1 percent level, except that the difference between employed women with and without children under 12 is only significantly different at the 10 percent level.
- ⁶ Variants of this variable (income from partners, as opposed to total household income or a dummy variable for if the woman contributes more than the man) are also not statistically significant.
- ⁷ Factor analysis will also help to assess the extent to which the order in which the questions on life satisfaction have been asked is likely to have affected the answer to the overall life satisfaction score and the way in which the latter is understood (Kahneman and Krueger 2006). We do not find the latter to be a problem, though leisure time and leisure use scores are almost perfectly correlated, raising the question as to whether they are properly understood by respondents as being different.
- ⁸ In order to avoid extreme multicollinearity and singularity, we first eliminate satisfaction with leisure use (this gives us a correlation matrix with determinant

greater than 0.00001). The sphericity tests, and the Kaiser–Meyer–Olkin measure of sampling adequacy, indicate that the pattern of correlations is quite concentrated and therefore factor analysis is a good model for our data. On the basis of a scree plot (not shown), we retain five factors (Kaiser’s criterion does not apply to us, as our sample is greater than 250 and the average communality is below 0.6); and given that there are theoretical grounds to assume our factors might be correlated, we perform an oblim rotation with Kaiser normalization to obtain a clearer pattern matrix to help interpretation.

REFERENCES

- Alesina, Alberto, Rafael Di Tella, and Robert MacCulloch. 2004. “Inequality and Happiness: Are Europeans and Americans Different?” *Journal of Public Economics* 88(9–10): 2009–42.
- Antonopoulos, Rania. 2008. “The Unpaid Care Work–Paid Work Connection.” Working Paper 541, Levy Economics Institute, Bard College.
- Bettio, Francesca, Annamaria Simonazzi, and Paola Villa. 2006. “Change in Care Regimes and Female Migration: The ‘Care Drain’ in the Mediterranean.” *Journal of European Social Policy* 16(3): 271–85.
- Blanchflower, David G. and Andrew J. Oswald. 2004. “Well-Being Over Time in Britain and the USA.” *Journal of Public Economics* 88(7–8): 1359–86.
- Bloemen, Hans G., Silvia Pasqua, and Elena G. F. Stancanelli. 2008. “An Empirical Analysis of the Time Allocation of Italian Couples: Are Italian Men Irresponsible?” Tinbergen Institute Discussion Papers 08–111/3, Tinbergen Institute.
- Booth, Alison L. and Jan C. van Ours. 2008. “Job Satisfaction and Family Happiness: The Part-Time Work Puzzle.” *Economic Journal* 118(526): F77–99.
- Boyce, Christopher J. 2010. “Understanding Fixed Effects in Human Well-Being.” *Journal of Economic Psychology* 31(1): 1–16.
- British Household Panel Survey (BHPS) 1996–2007.
- Burchardt, Tania. 2008. “Time and Income Poverty.” CASE report 57, Centre for Analysis of Social Exclusion, London School of Economics.
- Burda, Michael, Daniel S. Hamermesh, and Philippe Weil. 2007. “Total Work, Gender and Social Norms.” NBER Working Paper 13000, National Bureau of Economic Research.
- Clark, Andrew E., Ed Diener, Yannis Georgellis, and Richard E. Lucas. 2008. “Lags and Leads in Life Satisfaction: A Test of The Baseline Hypothesis.” *Economic Journal* 118(529): F222–43.
- Clark, Andrew E. and Andrew J. Oswald. 1994. “Unhappiness and Unemployment.” *Economic Journal* 104(424): 648–59.
- Della Giusta, Marina, Sarah Louise Jewell, and Uma S. Kambhampati. 2010. “Anything to Keep You Happy,” School of Economics Discussion Paper 2010–82, University of Reading.
- Di Cesare, Mariachiara, and Alessia Amori. 2006. “Gender and Happiness in Italy.” Paper presented at the Population Association of America 2006 Annual Meeting.
- Di Tella, Rafael, Robert J. MacCulloch, and Andrew J. Oswald. 2003. “The Macroeconomics of Happiness.” *Review of Economics and Statistics* 85(4): 809–27.
- Dolan, Paul, Tessa Peasgood, and Mathew White. 2008. “Do We Really Know What Makes Us Happy? A Review of the Economic Literature on the Factors Associated with Subjective Well-Being.” *Journal of Economic Psychology* 29(1): 94–122.
- Doss, Cheryl R. 1996. “Testing among Models of Intrahousehold Resource Allocation.” *World Development* 24(10): 1597–609.

- Easterlin, Richard A. 2003. "Happiness of Women and Men in Later Life: Nature, Determinants, and Prospects," in M. Joseph Sirgy, Don Rahtz, and A. Coskin Samli, eds. *Advances in Quality-of-Life Theory and Research*. pp. 13–26. Dordrecht, The Netherlands: Kluwer.
- Ferrer-i-Carbonell, Ada and Paul Frijters. 2004. "How Important is Methodology for the Estimates of the Determinants of Happiness?" *Economic Journal* 114: 641–59.
- Folbre, Nancy, Jayoung Yoon, Kade Finnoff, and Allison Sidle Fuligni. 2004. "By What Measure? Family Time Devoted to Children in the US." Working Paper 2004–06, Department of Economics, University of Massachusetts, Amherst.
- Frey, Bruno S. and Alois Stutzer. 2002. *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being*. Princeton, NJ: Princeton University Press.
- Gash, Vanessa, Antje Mertens, and Laura Romeu Gordo. 2010. "Women between Part-Time and Full-Time Work: The Influence of Changing Hours of Work on Happiness and Life-Satisfaction." SOEP Papers 268, DIW Berlin, German Socio-Economic Panel (SOEP).
- Gaspar, Des. 2007. "Adding Links, Adding Persons, and Adding Structures: Using Sen's Frameworks." *Feminist Economics* 13(1): 67–85.
- Gupta, Sanjiv. 2006. "Her Money, Her Time: Women's Earnings and Their Housework Hours." *Social Science Research* 35(4): 975–99.
- Harmonised European Time Use Survey. 2007. <http://wwwh2.seb.se/tus/tus/StatMeanMact1.html> (accessed May 2011).
- Hodinnott, John and Lawrence Haddad. 1995. "Does Female Income Share Influence Household Expenditures? Evidence from Côte d'Ivoire." *Oxford Bulletin of Economics and Statistics* 57(1): 77–96.
- Kahneman, Daniel and Alan B. Krueger. 2006. "Developments in the Measurement of Subjective Well-Being." *Journal of Economic Perspectives* 20(1): 3–24.
- Layard, Richard. 2006. "Happiness and Public Policy: A Challenge to the Profession." *Economic Journal* 116(510): C24–33.
- MacDonald, Martha, Shelley Phipps, and Lynn Lethbridge. 2005. "Taking Its Toll: The Influence of Paid and Unpaid Work on Women's Well-Being." *Feminist Economics* 11(1): 63–94.
- Marcelli, Enrico A. and Richard A. Easterlin. 2005. "Beyond Gender Differences in US Life Cycle Happiness." Working Papers 2, University of Massachusetts Boston, Department of Economics.
- Mattingly, Marybeth and Suzanne Bianchi. 2003. "Gender Differences in the Quantity and Quality of Free Time: The US Experience." *Social Forces* 81(3): 999–1030.
- Mentesoglu, Gulcin and Maarten Vendrik. 2009. "Adaption, Anticipation, and Social Interaction in Happiness: An Integrated Error-Correction Approach." Paper presented at the EALE/SOLE Conference 2010.
- Mroczek, Daniel K. and Christian M. Kolarz. 1998. "The Effect of Age on Positive and Negative Affect: A Developmental Perspective on Happiness." *Journal of Personality and Social Psychology* 75(5): 1333–49.
- Nussbaum, Martha C. 2000. *Women and Human Development: The Capabilities Approach*. Cambridge, UK: Cambridge University Press.
- Oswald, Andrew J. and Nattavudh Powdthavee. 2008. "Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges." *Journal of Public Economics* 92(5–6): 1061–77.
- Robeyns, Ingrid. 2003. "Sen's Capability Approach and Gender Inequality: Selecting Relevant Capabilities." *Feminist Economics* 9(2–3): 61–92.
- Sen, Amartya. 1999. *Development as Freedom*. New York: Oxford University Press.
- Senik, Claudia. 2009. "Direct Evidence on Income Comparisons and Their Welfare Effects." *Journal of Economic Behavior and Organization* 72(1): 408–24.

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- Stevenson, Betsey and Justin Wolfers. 2009. "The Paradox of Declining Female Happiness." *American Economic Journal: Economic Policy* 1(2): 190–225.
- Stutzer, Alois and Bruno S. Frey. 2006. "Does Marriage Make People Happy, Or Do Happy People Get Married?" *Journal of Socio-Economics* 35(2): 326–47.
- White, Mathew P. and Paul Dolan. 2009. "Accounting for the Richness of Daily Activities." *Psychological Science* 20(8): 1000–8.
- Wood, Wendy, Nancy Rhodes, and Melanie Whelan. 1989. "Sex Differences in Positive Well-Being: A Consideration of Emotional Style and Marital Status." *Psychological Bulletin* 106(2): 249–64.

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Appendix 1 Distribution of life satisfaction responses by gender, excluding retired individuals

<i>Life satisfaction</i>	<i>Women (%)</i>	<i>Men (%)</i>
1	1.6	1.2
2	2.3	2.2
3	6.5	6.2
4	15.1	13.7
5	29.9	32.9
6	32.7	34.2
7	12.0	9.6
Mean	5.16	5.16
SD	1.30	1.22
No. of obs.	55,800	48,747
Chi-squared test	303.09***	

Notes: *** denotes statistical significance at the 1 percent level. ^aChi-squared test that the distribution of life satisfaction responses vary by gender.

Appendix 2 Variable definitions

<i>Variable</i>	<i>Definition</i>
Life satisfaction	Overall life satisfaction – individuals were asked to respond, on a scale of 1 (not satisfied at all) to 7 (completely satisfied), to the question: “How satisfied or dissatisfied are you with your life overall?” Individuals were also asked (on the same scale) their satisfaction with different aspects of their life, health, household income, house or apartment, partner, job, social life, leisure time, use of leisure time
Age	Age was grouped into several categories: 16–20, 21–24, 25–34, 35–49, 50+, with the 50+ category split into 50–64 and 64+ with the inclusion of retired individuals.
Gender	Sex of respondent
Ethnicity	Race of respondent: white or other
Religion	Divided into no religion, Christian, Catholic, and other religions
Marital status	Divided into married and living with spouse, cohabiting; for those not living with a spouse or partner: widowed, divorced or separated, single and never married
Spouse or partner employed	Whether spouse or partner is employed
No qualifications	Whether respondent has no qualifications
University education	Whether respondent holds university education
Log of household income	Log of annual household income divided by the number of adults in the household

(continued)

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Appendix 2 (Continued)

<i>Variable</i>	<i>Definition</i>
Labor market status	Current labor market status with options of: employed, unemployed, retired, family care, education or training, sick or disabled, and other
Paid hours worked per week	Includes hours from the respondent's usual job, overtime, and any second jobs. We also included hours worked per week squared to allow for nonlinear effects
Hours spent on housework per week	Housework hours per week. Individuals were asked: "About how many hours do you spend on housework in an average week, such as time spent cooking, cleaning, and doing the laundry?"
Caring hours per week	Individuals were asked whether they cared for anybody in or outside the household, for example a sick, handicapped, or elderly relative. Individuals who undertook caring were asked how many hours per week they spent caring for the individual(s), and we grouped this into three manageable groups: 0-9, 10-34, 35+ hours. The reference category is no caring undertaken
Number of children	The number of the respondents' own children under 16 living with them in the household. Grouped in the BHPS by several age categories: ages 0-2, 5-11 and 12-15.

Appendix 3 Descriptive statistics of regression variables by gender, including retired individuals

<i>Variable</i>	<i>Women</i>		<i>Men</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Life satisfaction	5.23	1.33	5.24	1.25
<i>Personal characteristics</i>				
White	0.97	0.16	0.97	0.17
Non-religious	0.35	0.48	0.47	0.50
Christian	0.48	0.50	0.38	0.49
Catholic	0.12	0.32	0.10	0.30
Other religion	0.05	0.22	0.05	0.22
<i>Age group</i>				
16-20	0.08	0.27	0.08	0.27
21-24	0.06	0.23	0.06	0.24
25-34	0.18	0.38	0.18	0.38
35-49	0.28	0.45	0.29	0.45
50-64	0.21	0.41	0.22	0.41
65+	0.19	0.40	0.18	0.38

(continued)

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Appendix 3 (Continued)

<i>Variable</i>	<i>Women</i>		<i>Men</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<i>Marital status</i>				
Live with spouse or partner	0.63	0.48	0.68	0.47
Married living with spouse	0.52	0.50	0.57	0.50
Cohabiting	0.11	0.31	0.12	0.32
Divorced or separated	0.09	0.28	0.05	0.23
Widowed	0.11	0.31	0.04	0.19
Single and never married	0.18	0.38	0.22	0.42
<i>Spouse or partner employed</i>	0.46	0.50	0.42	0.49
<i>Education</i>				
University education	0.12	0.32	0.13	0.34
No qualifications	0.25	0.43	0.20	0.40
<i>Income</i>				
Log (household income)	9.26	0.81	9.31	0.84
<i>Labor market status</i>				
Employed	0.52	0.50	0.65	0.48
Unemployed	0.02	0.15	0.04	0.20
Retired	0.23	0.42	0.20	0.40
Family care	0.12	0.33	0.01	0.07
Education or training	0.06	0.23	0.05	0.23
Sick or disabled	0.04	0.19	0.05	0.21
Other	0.005	0.07	0.004	0.06
<i>Paid hours worked per week</i>	17.85	18.79	29.75	23.13
<i>Housework hours per week</i>	14.93	11.00	5.82	6.19
<i>Time spent caring</i>				
No caring	0.82	0.39	0.85	0.35
0–9 hours per week	0.10	0.31	0.09	0.29
10–34 hours per week	0.05	0.21	0.03	0.17
35+ hours per week	0.03	0.18	0.02	0.15
<i>Number of children</i>				
No children under 16	0.69	0.46	0.73	0.44
Number ages 0–2	0.07	0.26	0.06	0.25
Number ages 3–4	0.06	0.25	0.06	0.25
Number ages 5–11	0.28	0.64	0.25	0.61
Number ages 12–15	0.14	0.42	0.12	0.39
<i>No. of obs.</i>	72,239		60,884	

Appendix 4 Comparison of different modeling approach to life satisfaction

	<i>Ordered probit</i>	<i>OLS</i>	<i>Random effects</i>	<i>Fixed effects</i>	<i>Random effects excluding time invariant variables</i>
<i>Personal characteristics</i>					
Female	-0.004 [0.014]	-0.014 [0.016]	-0.007 [0.016]		
White	0.108*** [0.036]	0.137*** [0.043]	0.118*** [0.042]		
<i>Religion (ref: Non-religious)</i>					
Christian	0.076*** [0.015]	0.090*** [0.017]	0.109*** [0.017]		
Roman Catholic	0.03 [0.023]	0.033 [0.026]	0.033 [0.026]		
Other religion	0.004 [0.027]	-0.011 [0.031]	0.025 [0.030]		
<i>Age group (ref: 35–49)</i>					
16–20	0.386*** [0.026]	0.442*** [0.030]	0.318*** [0.023]	0.187*** [0.038]	0.303*** [0.022]
21–24	0.193*** [0.022]	0.224*** [0.026]	0.118*** [0.019]	0.028 [0.029]	0.106*** [0.019]
25–34	0.100*** [0.015]	0.115*** [0.017]	0.071*** [0.012]	0.040** [0.018]	0.063*** [0.012]
50+	0.185*** [0.017]	0.202*** [0.020]	0.116*** [0.013]	0.044** [0.019]	0.125*** [0.013]
<i>Marital status (ref: single and never married)</i>					
Married and living with spouse	0.230*** [0.025]	0.258*** [0.030]	0.162*** [0.021]	0.075** [0.031]	0.170*** [0.021]
Cohabiting	0.142*** [0.025]	0.156*** [0.029]	0.108*** [0.020]	0.085*** [0.027]	0.110*** [0.020]

(continued)

Appendix 4 (Continued)

	Ordered probit	OLS	Random effects	Fixed effects	Random effects excluding time invariant variables
Divorced or separated	-0.214*** [0.029]	-0.276*** [0.035]	-0.229*** [0.025]	-0.149*** [0.039]	-0.225*** [0.025]
Widowed	0.032 [0.056]	0.015 [0.064]	-0.144*** [0.051]	-0.363*** [0.087]	-0.134*** [0.051]
Spouse or partner employed	0.073*** [0.018]	0.094*** [0.020]	0.079*** [0.013]	0.070*** [0.017]	0.078*** [0.013]
Education					
University education	-0.013 [0.017]	-0.004 [0.019]	-0.004 [0.016]	-0.032 [0.030]	-0.004 [0.016]
No qualifications	0.104*** [0.021]	0.072*** [0.024]	0.038** [0.019]	0.013 [0.037]	0.036* [0.019]
Income					
Log (household income)	0.060*** [0.006]	0.071*** [0.007]	0.035*** [0.005]	0.020*** [0.005]	0.035*** [0.005]
Paid hours worked per week	0.006 [0.008]	0.024*** [0.009]	0.030*** [0.006]	0.027*** [0.008]	0.030*** [0.006]
Totals hours employed/10	-0.002* [0.001]	-0.004*** [0.001]	-0.003*** [0.001]	-0.003** [0.001]	-0.003*** [0.001]
Total hours employed/10 squared	-0.402*** [0.027]	-0.503*** [0.033]	-0.366*** [0.024]	-0.287*** [0.026]	-0.369*** [0.023]
Unemployed	-0.868*** [0.034]	-1.110*** [0.042]	-0.816*** [0.029]	-0.569*** [0.039]	-0.816*** [0.029]
Sick or disabled	-0.002 [0.007]	-0.003 [0.008]	-0.0002 [0.005]	0.002 [0.006]	-0.0002 [0.005]
House work hours per week/10					

(continued)

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Appendix 4 (Continued)

	Ordered probit	OLS	Random effects	Fixed effects	Random effects excluding time invariant variables
<i>Time spent caring (ref: No caring)</i>					
0–9 hours per week	-0.084*** [0.015]	-0.090*** [0.017]	-0.024** [0.012]	-0.001 [0.013]	-0.023* [0.012]
10–34 hours per week	-0.133*** [0.026]	-0.155*** [0.030]	-0.058*** [0.020]	-0.02 [0.022]	-0.057*** [0.020]
35+ hours per week	-0.252*** [0.037]	-0.299*** [0.045]	-0.172*** [0.032]	-0.102*** [0.037]	-0.174*** [0.032]
<i>Number of children</i>					
Number ages 0–2	0.010 [0.014]	0.006 [0.016]	0.001 [0.012]	0.022 [0.014]	-0.001 [0.012]
Number ages 3–4	-0.036*** [0.014]	-0.035** [0.016]	-0.047*** [0.012]	-0.026* [0.014]	-0.049*** [0.012]
Number ages 5–11	-0.049*** [0.008]	-0.052*** [0.009]	-0.030*** [0.007]	0.004 [0.010]	-0.032*** [0.007]
Number ages 12–15	-0.094*** [0.011]	-0.108*** [0.013]	-0.043*** [0.009]	0.002 [0.011]	-0.044*** [0.009]
Constant			4.468*** [0.070]	4.824*** [0.083]	4.618*** [0.056]
Observations	104,547	104,547	104,547	104,547	104,547
Number of individuals	-159,858	17,649	17,649	17,649	
Log likelihood		-166,716			
rho			0.478	0.554	0.478
(pseudo) <i>r</i> -squared	0.03	0.09	0.09	0.07	0.09
Hausman test of FE vs RE		436.18***			

Notes: Robust standard errors in brackets. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Includes wave and region dummies. Standard errors adjusted for individual clusters in the ordered probit and OLS models.

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Appendix 5 Life satisfaction principal component analysis factor loadings

<i>Women</i>					
<i>Life dimension</i>	<i>Component</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Health	-0.002	0.036	0.014	0.960	-0.014
Income of household	0.017	0.587	-0.067	0.203	0.060
House or apartment	-0.014	0.808	0.065	-0.191	-0.060
Spouse or partner	0.013	-0.016	0.987	0.010	0.003
Job	0.001	0.013	0.003	-0.011	0.996
Social life	0.656	0.012	0.091	0.017	0.015
Leisure time	0.754	-0.009	-0.093	-0.020	-0.016

<i>Men</i>					
<i>Life dimension</i>	<i>Component</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Health	0.009	0.007	-0.014	0.004	0.994
Income of household	-0.021	0.600	0.263	-0.128	0.065
House or apartment	0.013	0.017	0.939	0.032	-0.020
Spouse or partner	0.010	-0.017	0.023	0.978	0.004
Job	0.023	0.799	-0.218	0.111	-0.059
Social life	0.640	0.022	0.030	0.081	0.042
Leisure time	0.768	-0.025	-0.027	-0.088	-0.043