The Life Satisfaction Advantage of Being Married and Gender Specialization

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ABSTRACT

This investigation examined whether the life satisfaction advantage of married over unmarried persons decreased over the last three decades, and whether the changes in the contextual gender specialization explained this trend. The author used representative data from the World Values Survey–European Values Study (WVS–EVS)-integrated data set for 87 countries (N = 292,525) covering a period of 29 years. Results showed that the life satisfaction advantage of being married decreased among men but not among women. The analysis did not support the hypothesis that contextual gender specialization shaped the observed trend. Only in developed countries the declining contextual specialization correlated with smaller life satisfaction advantage of being married. This evidence suggests that the advantages of marriage are greater under conditions that support freedom of choice rather than economic necessity. (130 words)

A large body of literature showed that married persons are happier and more satisfied with their lives than unmarried persons (see, e.g., Mastekaasa, 1994; Stack & Eshleman, 1998; Verbakel, 2012, Gove et al., 1990). Yet, growing divorce and cohabitation rates and falling marriage and fertility rates suggest a "retreat from marriage" (see e.g., Adams, 2004; Cherlin, 2004; Huston & Melz, 2004; Popenoe, 1993). Research showed that the life satisfaction advantage of being married (defined as the difference between the population-based averages of the life satisfaction of married and unmarried persons) decreased over time in the US (Glenn & Weaver, 1988). This suggests that marriages in contemporary societies became less advantageous than they were in the past.

Over recent decades, another change occurred: men and women allocate their time in a more similar way than they did in the past (Bianchi et al., 2000). The employment of women, even those who are married and have children, is now accepted in most developed countries (Brewster & Rindfuss, 2000; Sayer & Bianchi, 2000). The general trend is of a decline in specialization, which is defined as gendered divisions of tasks within married couples between the labor market (typically assigned to men) and the household work (typically performed by women). Although theoretical approaches in both economics and sociology postulate that married couples benefit from gender specialization within marriages (e.g. Becker, 1981; Parsons, 1949; Stevenson & Wolfers, 2007), the relationship between specialization and the life satisfaction advantage of being married has so far received scarce attention.

The contribution of this paper is twofold. First, it describes how the relationship between marriage and life satisfaction has changed over time and across countries. This paper shows that the declining life satisfaction advantage of being married—identified so far in the US (Glenn & Weaver, 1988)—is a general trend only among men: it holds in a set of 87 countries at various

levels of development, and it has been observed over a period of up to 29 years. The trend of life satisfaction advantage of being married among women is more positive than among men and it is statistically insignificant in the overall sample. This is the first paper to provide such evidence.

The second contribution is to verify whether macro-level characteristics—in particular, the contextual gender specialization—account for the changes to the life satisfaction advantage of being married. The results show that a decline in contextual gender specialization did not explain the declining life satisfaction advantage of being married among men. Only in developed countries the decline in specialization correlated with smaller life advantage satisfaction of being married; however, this was due to positive correlation with the life satisfaction of unmarried persons. This is the first paper to provide such evidence with broad, comparative cross-country data.

CHANGES OVER TIME TO THE LIFE SATISFACTION ADVANTAGE OF BEING MARRIED

Previous research investigated changes to the life satisfaction advantage of being married over recent decades, providing mixed results. Waite (2000) compared the population averages of the well-being of married persons vs. never-married and previously married persons over the period 1972–1996 in the US and found no significant shift in the life satisfaction advantage of being married. In contrast, Glenn and Weaver (1988) showed a decline in the cross-sectional relationship between marital status and declared happiness over the period 1972–1986, mainly due to the negative trend of life satisfaction among married women and a positive trend among never married men. Both papers of Waite (2000) and Glenn and Weaver (1988) focus on

population averages; moreover, both examine the case of the US using data from the General Social Survey.

If the advantage decreases, it may be due to a lowered satisfaction of married persons or to an increased life satisfaction of unmarried persons. The former has been examined by the literature that investigated the changes in marital quality, marital interaction, and marital conflict. For instance, Waite (2000) and Glenn (1991) showed that the percentage of married men and women who declared that their marriage was very happy has been declining slightly in the US since the 1970s. Similarly, Amato et al. (2003) showed that in the US during the years 1980-2000, marital interactions declined, even though marital quality and divorce proneness changed little. In a similar vein, Rogers and Amato (2000) provided evidence that the cohort married between 1981 and 1997 reported less interaction and more marital conflict than the cohort married between 1964 and 1980. However, Corra et al. (2009) found no consistent trend of satisfaction with marriage during the years 1973–2006 across groups of White and Black husbands and wives. In contrast to these predominantly negative results, the life satisfaction of unmarried persons, in particular men, was increasing during the 1970s and the 1980s (Glenn & Weaver, 1988; Lee et al., 1991). In sum, the majority of these results suggest that the advantages of marriage are declining over time.

GENDER SPECIALIZATION IN MARRIAGE

The decline of gender specialization was a part of a broader transformation of marriage and family, known as the second demographic transition (Lesthaeghe, 2010). Theoretical approaches offer at least four arguments why declining gender specialization may be at the roots of the declining life satisfaction advantage of being married.

First, declining gender specialization may directly lower the well-being of married couples. According to the economic household model (Becker, 1981), gender specialization increases the overall productivity of the household, its wealth, and therefore the life satisfaction of the couple (Stutzer & Frey, 2006). Similar to the economic model of Becker, the sociological stream of functionalism theorized that the division of roles between men and women and their complementarity was functional for the institution of the family (Parsons, 1949). Both theories suggest that the declining gender specialization may erode part of the benefits of marriage. Intuitively, specialization in the couple should play a role; however, at individual level specialization is endogenous to being in a good relationship (e.g., in bad relationships women seek employment to increase their independence [Oppenheimer, 1997]). Thus, the relationship between individual specialization and life satisfaction advantage from marriage would reflect, at least in part, self-selection. The focus on contextual gender specialization of this paper helps overcome this limitation.

Second, declining gender specialization might have improved the living conditions of unmarried persons. Technological progress in household appliances, as well as market availability of goods and services which replace for those produced within household (washing machines, ready-made meals etc.) decrease the benefits of household-specific skills, thus lowering the cost of living as a single (Stevenson & Wolfers, 2007). This change likely increased the life satisfaction of unmarried persons more than it increased the life satisfaction of married persons, thus reducing the relative advantage of being married.

Third, declining gender specialization may be related to lower life satisfaction advantage of being married when gender specialization is common. In such cases, the presence of other social institutions designed to benefit from specialization make the benefits of specialization

within the marriage higher. The institutions of interest may include educational systems, taxation, provision of welfare, etc. (Esping-Andersen et al., 2013). For example, the advantage of living as married may be stronger in societies relying on private provision of care for the elderly than in societies where elderly care is provided by the state.

Finally, the life satisfaction advantage of being married might have decreased with declining gender specialization because of the values change which accompanied the second demographic transition (Lesthaeghe, 2010). In the context of lower gender specialization people may systematically more often expect that marriage satisfies their more complex needs (e.g. the need of self-actualization) than in the gender specialized societies, where the need of safety would be the dominating motive to marry (Finkel et al. 2014; Lundberg, 2012, Lundberg & Pollak, 2013, Stevenson & Wolfers, 2007). Satisfaction of higher needs requires larger investment of psychological resources than satisfaction of basic needs; it is therefore more difficult. This, in turn, may lower the marital satisfaction and the subjective well-being of married couples living in societies where gender specialization is rare.

All four arguments suggest that the contextual gender specialization may correlate with the higher life satisfaction advantage of being married. The cross-country variations in the life satisfaction advantage of being married across social contexts has been so far neglected, even though broad literature examined how social context affects the life satisfaction gap between married and cohabiting couples (see, e.g., Diener et al., 2000; Ryan et al., 1998; Schultz Lee & Ono, 2012; Soons & Kalmijn, 2009; Vanassche et al., 2012; Verbakel, 2012).

GENDER DIFFERENCES

In gender-specialized societies women have lower possibilities to leave unsatisfactory marriages because gender specialization correlates with scarce employment opportunities for women (Sayer & Bianchi, 2000). Therefore, where the contextual gender specialization is high, marriages tend to be structured to men's advantage and to be more beneficial to men rather than to women. Hence, the gains from marriage in the context of high specialization may be higher for men than for women; moreover, the decline of specialization may benefit married women more than married men.

Taking this into account, present analysis investigates the gender differences in the life satisfaction advantage of being married. Specifically, I allow for a different trend of this advantage among men and women, and a different relationship between gender specialization and the advantage of being married.

PRESENT CONTRIBUTION

The goal of this analysis is twofold. First, it provides evidence on the time trend of life satisfaction advantage of being married. Previous literature showed that this advantage in the US declined (Glenn & Weaver, 1988), but evidence in other countries and regions is missing. I verify the hypothesis that the declining life satisfaction advantage of being married is a general trend.

Second, I investigate how macro factors—in particular, contextual gender specialization—affect the life satisfaction advantage of being married. It should be stressed that I do not examine the life satisfaction difference between women who stay at home and women who work for pay. I am interested in the difference between societies where, due to normative,

technological, and institutional reasons, it is easy for a woman to become a housewife and it is difficult to enter employment, and societies where (for the same reasons) it is easy for a woman to work for pay and unlikely to become a housewife. In other words, I investigate the consequences of the social change that occurred over the last few decades, which led to the normative acceptance of women's employment and the building of institutional support for it. Hence, I test the hypothesis that marriage became less advantageous as men's and women's roles in marriages became less differentiated.

METHOD

Data

This analysis uses the WVS–EVS integrated data set covering the period 1981–2009 (EVS, 2011; WVS, 2009). The main advantage of the WVS–EVS is its broad coverage: its data represent nearly 90% of the world's population and range over a period of almost 30 years, allowing for a comparative analysis of countries' time-series. Additionally, the large number of countries and periods allows for a satisfactory variation in macro-level variables. The limitations of the WVS–EVS data are typical for secondary data (Hofferth, 2005). Specifically, it allows employing only one measure of gender specialization (i.e. the share of homemakers), and does not allow using other measures proposed by the literature (for more details see the section: Measurement of Macro-Level Variables.)

During the course of the WVS and EVS surveys, individual country research agencies and institutions collected data on representative samples of adult populations (aged 18 or older). The questionnaires were uniformly structured and the translation of the English questionnaire into national languages was monitored. The modes of data collection included face-to-face and

phone interviews in the case of WVS, face-to-face interviews (either CAPI or PAPI) in the case of EVS, and an Internet panel (Finland in EVS). Currently, the WVS data contains five waves (1981–84, 1989–91, 1994–99, 1999–2004, and 2004–08) and the EVS data contains four waves (1981–84, 1990–93, 1999–2001, and 2008–09); in some countries and during some years the data was collected in both surveys.

The integrated data set contains information for 102 countries and over 420,000 respondents. Some questions were not included in all countries and waves; therefore the sample used in the analysis consists of 138,573 men and 153,952 women, for a total of 292,525 individuals. The percentage of missing cases in countries and waves included in the analysis is 7.7%, which guarantees that the risk of systematic bias of the estimates due to missing data is low.

Empirical strategy

Focus on the life satisfaction advantage of being married over being unmarried

To answer the research questions I focus on the size of the life satisfaction advantage of being married over being unmarried. Technically, I investigate the coefficient of the "married" variable and its interactions with other variables of interest. This strategy allows distinguishing between the general macro determinants of life satisfaction and the macro factors that correlate specifically with the life satisfaction of married persons. Across social contexts, the average life satisfaction of married and of unmarried persons is strongly correlated (ρ = .99 for the 211 country-waves), which suggests that the life satisfaction of married and unmarried persons is—to some extent—determined by the same factors.

I examine the correlation of marital status with life satisfaction in various social contexts (e.g. varying in the level of contextual specialization); a similar strategy was employed by Kalmijn (2010), as well as in papers examining the life satisfaction gap between married and cohabiting couples (see, e.g., Schultz Lee & Ono, 2012.)

Cross-country differences vs. changes over time

A comparative analysis of time trends calls for distinguishing between the effects of the cross-country differences and the effects of changes that take place over time. The changes over time and the cross-country differences of the macro factors may be interpreted analogously to within- and between-individual effects in regression models for panel data: the former shows what differences in life satisfaction are associated with within-country changes to the macro factors over time (e.g. a decline of contextual specialization), and the latter identifies what differences in life satisfaction are associated with the cross-country differences in the macro factors (e.g. differences between countries with low and high contextual specialization).

The distinction between changes over time and cross-country differences is relevant for translating the results into policy recommendations. The effects of changes over time control for the unobserved time-invariant differences between countries; therefore, they allow drawing stronger conclusions. Interpretations of the effects of the cross-country differences in terms of the potential effects of policies are limited because the coefficients also capture the effects of unobserved time-invariant differences among countries, which may be large if countries are at different levels of development or have different cultural backgrounds.

Selection to marriage

Longitudinal studies showed that the cross-sectional relationship between marriage and life satisfaction is partly causal (Evans & Kelley, 2004; Soons et al., 2009) and partly shaped by

selection: happier unmarried persons have a higher chance of marrying (Stutzer & Frey, 2006), and unhappy married persons have a higher chance of divorcing (Zimmermann & Easterlin, 2006). Ignoring selection in the model may produce biased estimates of the relationship between marital status and life satisfaction.

Hence, I control for selection to marriage. First, among individual control variables, I include the probability of being married, measured as the percentage of married persons in the socio-demographic group of the respondent. Both very high and very low probabilities of being married may indicate stronger selection; therefore, I include linear and quadratic terms to allow for nonlinear relationships.

Second, as divorce is typically higher in societies where gender specialization is lower (Oppenheimer, 1997; Sayer & Bianchi, 2000), among the control variables at the macro level I include divorce ratio. As divorces dissolve bad marriages, a high divorce ratio may serve as a measure of the selection out of marriage.

Statistical method

The main analysis consists of multilevel regression of individual-level life satisfaction modelled as a function of both individual and country characteristics. I use multilevel—rather than ordinary OLS—regression, because the hierarchical data (such as the multi-country WVS–EVS with individuals nested within country-waves nested within countries) do not satisfy the basic assumption of the independence of observations. This may bias downward the estimated standard errors, which in turn can result in wrongly rejecting or supporting theoretically important conclusions (Bryk & Raudenbush, 1992; Luke, 2004). Multilevel models properly account for the hierarchical structure of the data; they also simultaneously estimate the variation

within and between countries and country-waves, and the variation unexplained by the model can be attributed to the specific levels of data.

Random-effect multilevel models (such as the one used in this analysis) assume that random effects are not correlated with the explanatory variables; if this assumption is not met, the results are inconsistent. Therefore I validated the analysis by estimating models with fixed intercepts (dummy variables) for countries and country-waves (Snijders, 2005a). As the fixed-effects models provided the same results as the random-effects models, I present the results of the random-effects model, as it is considered more efficient.

I estimate a three-level model with individuals *i* nested within country-waves *j* nested within countries *c*. The number of waves observed per country varies between 1 and 7 (in the case of Spain). Overall, I observe 211 country-waves, with an average of 2.4 waves per country. This small average cluster size at level 3 is not an obstacle for estimating the effects at this level, as the total sample size at this level is of prime importance (Snijders, 2005b).

Formally, the model is described by Equations (1)–(3).

$$\begin{aligned} LS_{ijc} &= \alpha_{0jc} + \beta_1 \text{Married}_{ijc} + \mathbf{B}_K \mathbf{X}_{ijc} + \beta_2 \text{Year}_{jc} + \beta_3 \text{Year}_{jc}\text{Married}_{ijc} + \\ &+ \beta_4 \text{Woman}_{ijc} + \beta_5 \text{Year}_{jc}\text{Woman}_{ijc} + \beta_6 \text{Year}_{jc}\text{Married}_{ijc}\text{Woman}_{ijc} + \\ &+ \beta_7 \Delta\text{Specialization}_{jc} + \beta_8 \Delta\text{Specialization}_{jc}\text{Married}_{ijc} + \\ &+ \beta_9 \Delta\text{Specialization}_{jc}\text{Woman}_{ijc} + \beta_{10} \Delta\text{Specialization}_{jc}\text{Married}_{ijc}\text{Woman}_{ijc} + \\ &+ \beta_{11} \mu\text{Specialization}_{jc} + \beta_{12} \mu\text{Specialization}_{jc}\text{Married}_{ijc} + \\ &+ \beta_{13} \mu\text{Specialization}_{jc}\text{Woman}_{ijc} + \beta_{14} \mu\text{Specialization}_{jc}\text{Married}_{ijc}\text{Woman}_{ijc} + \\ &+ \mathbf{B}_L \Delta\mathbf{Y}_{jc} + \mathbf{B}_M \Delta\mathbf{Y}_{jc}\text{Married}_{ijc} + \mathbf{B}_N \boldsymbol{\mu}\mathbf{Z}_c + \mathbf{B}_P \boldsymbol{\mu}\mathbf{Z}_c\text{Married}_{ijc} + \varepsilon_{ijc} \end{aligned} \quad (1)$$

$$\alpha_{0jc} = \gamma_{00c} + \tau_{jc} \quad (2)$$

$$\gamma_{00c} = \gamma_{000} + v_c \quad (3)$$

In this model, individual life satisfaction (LS_{ijc}) is regressed on a set of individual, country-wave, and country-level predictors. In Equation (1), the coefficient β_2 describes the trend of life satisfaction among unmarried men, and β_5 informs how the trend of life satisfaction among unmarried women differs from the one among men. The coefficient β_3 describes the overall trend of the life satisfaction advantage of being married among men; and β_6 informs how much the trend among women differs from the trend among men. Coefficients β_7, β_9, β_{11}, and β_{13} show how the life satisfaction advantage of being married changes (for men and women) with the level of specialization: β_7 and β_9 refer to within-country changes in specialization over time, whereas β_{11} and β_{13} refer to the cross-country differences in the level of specialization. The coefficients β_8, β_{10}, β_{12}, and β_{14} describe how the life satisfaction advantage of being married among men and women correlates with the contextual specialization. $\mathbf{X}_{ijc}$ is a vector of the individual-level control variables, $\mathbf{\Delta Y}_{jc}$ is a vector of the country-wave level control variables, and $\boldsymbol{\mu}\mathbf{Z}_c$ is a vector of the country-level control variables, whereas $\mathbf{B}_K$–$\mathbf{B}_P$ are the vectors of their respective coefficients.

In the model (see Equations [2] and [3]), the only coefficients allowed to vary randomly are the random intercepts τ_{jc} and v_c. In other words, average life satisfaction is allowed to vary randomly across country-waves and across countries.

Measurement of individual-level variables

The dependent variable is life satisfaction. The question, *"All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer,"*

collects the answers on a 10-point scale, from 1—*dissatisfied* to 10—*satisfied*. The variable has a distribution close to normal but it is negatively skewed with the grand mean of 6.7. Country-year- specific means vary between 3.72 (Moldova in 1996) and 8.5 (Puerto Rico in 2001).

Life satisfaction has been shown to be a reliable indicator of subjective well-being, which correlates with physiological symptoms of stress and pleasure (see e.g., Steptoe & Wardle, 2005; Urry et al., 2004), with third-person judgments (Schneider & Schimmack, 2009), and with satisfaction in particular domains of life (Schimmack et al., 2010).

Marital status is measured as a set of dummy variables, including (a) married (59% of the final sample), (b) living together as married (≈ 5%), (c) divorced (≈ 4%), (d) separated (1.6%), (e) widowed (≈ 7%), and (f) never married (23% of the final sample).

I control for a range of variables that may correlate with both life satisfaction and being married. These include self-declared unemployment (Kalmijn, 2007; Winkelmann & Winkelmann, 1998), self-declared status of housewife/househusband (Treas et al., 2011), education (Kalmijn, 2007) (secondary and tertiary education levels are coded as dummy variables), age (linear and square components, centered at 40), family income class (Burgess et al., 2003; Frijters et al., 2004) (measured on a 10-point scale, centered on the country-wave-specific median, missing values replaced with median and flagged; for wave 2008 of the EVS, a 12-point scale was recoded into a 10-point scale and used as in other waves), having children (Hansen, 2012) (dummy taking the value 1 for parents; for wave 2008 of the EVS the information on children living in the household was used), and health problems (measured on a 5-point scale, centered on the overall mean). In some waves and countries, education has been measured not as an educational level, but as the age of finishing education. In order to include

these countries and waves in the analysis, I have approximated the educational level based on the information on the age of finishing education: I recoded the age 23–35 years into tertiary and 18.5–23 years into secondary education.

To control for the selection to marriage at the individual level, I include the percentage of married persons in groups distinguished on the basis of country-wave, age, gender, and education (tertiary education vs. lower) (Kalmijn, 2010). Selection to marriage is captured by the interaction of this variable (and its quadratic term to allow for a non-linear relationship) with being married. The coefficient shows how the life satisfaction advantage of being married correlates with the probability of being married.

Measurement of macro-level variables

The economic specialization of spouses is approximated with the percentage of homemakers (i.e., women declaring that taking care of the home and of children is their main activity) among married women aged 18–60. This measurement directly refers to the work of Becker (1981), who exemplifies full specialization as a situation wherein the husband is employed in the labor market and the wife focuses on domestic production. This definition also refers to seeing the growing employment of married women as a sign of declining specialization and interdependency within marriages (Becker, 1985; Oppenheimer, 1994). In constructing the measure, I account for specialization among married persons because specialization is supposed to take place within a marriage; I focus on women, because employment is the norm for men and men's homemaking is likely driven by special circumstances. I limit the indicator to adults under 60, because after that age people often do not choose between employment and housework as they retire. Note that this definition is similar to the one used by Stutzer and Frey (2006), who defined couple-level

specialization as the situation in which one spouse is employed, while the other is inactive or occasionally participates in the labor market. Other authors measured specialization by the relative differences between spouses' wage rates (e.g., Stutzer & Frey, 2006) or between the working hours of spouses (e.g., Cohen, 2002); however, the information on working hours or earnings of spouses is not recorded by the WVS–EVS data. The specialization variable takes values between 0.4% (Sweden in 2009) and 90% (Pakistan in 1997; overall $\mu = .35$, $sd = .23$).

Apart from accounting for macro-level specialization, I also include the individual homemaker status in order to control for the specialization in a specific couple. Note that estimating the effect of individual-level specializations on life satisfaction with cross-sectional data is problematic because of endogeneity (Oppenheimer, 1997).

To isolate the effect of specialization, I control for a range of macro factors that likely correlate with the level of specialization and which may affect the life satisfaction of married couples: the GDP and fertility rate (Alesina & Giuliano, 2013), the political and social rights of women (Orloff, 1993), and the divorce ratio (Kalmijn, 2007, Stevenson & Wolfers, 2006). I also control for the year when the survey was conducted (centered on the year 2000).

The real GDP per capita (retrieved from: Heston et al., 2012) is expressed in international dollars of the year 2000 transformed into a logarithm. The fertility rate (number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates) is taken from the United Nations (2013) database.

The variables referring to the political and social rights of women come from Cingranelli and Richards (2008) database and range between 0 and 3 (0 indicates that women's rights were not guaranteed by law in a given year and country; 1 indicates that women's rights

were guaranteed by law but were not enforced in practice; 2 indicates that the rights were guaranteed by law and enforced in some areas, but women were still discriminated against in practice; and 3 indicates that women's rights were guaranteed in both law and practice). *Political rights* include the right to vote, to run for political office, to hold elected and appointed government positions, to join political parties, and to petition government officials. *Social rights* cover the right to equal inheritance; to enter into marriage on a basis of equality with men; to travel abroad; to obtain a passport; to confer citizenship to children or a husband; to initiate a divorce; to own, acquire, manage, and retain property brought into marriage; to participate in social, cultural, and community activities; to an education; to the freedom to choose a residence/domicile; and to the freedom from female genital mutilation and forced sterilization.

The divorce ratio is measured as a (country-wave specific) proportion of divorced women among all women aged 18–60. I use this information rather than the divorce rate (United Nations database) because the former is available only for 49 (out of 87) countries and 137 (out of 211) country-waves covered by this analysis. The correlation between the two measures on a country-wave level is $\rho = .69$.

Country level variables are included in the model as country-specific averages over the observation period (marked as $\mu\text{Specialization}_c$ and the vector $\mu\mathbf{Z}_c$ in Equation 1); the values are centered on the grand mean for easier interpretation of the coefficients. These variables capture the effects of cross-country differences of macro factors. Country-wave level variables (marked as $\Delta\text{Specialization}_{jc}$ and the vector $\mathbf{\Delta Y}_{jc}$ in Equation 1) are defined as the country-wave specific deviations from the country-specific mean (μ). These variables represent changes within countries over time. All variables are included as main effects, as well as interactions with being married and with being a woman.

RESULTS

I start by estimating the null model, i.e. an empty model containing only the (fixed and random) intercepts (not shown). In the null model 14.5% of the variation unexplained by the model is associated with the country level, and an additional 4% is associated with the country-wave level, which is a proportion large enough to justify the use of multilevel regression. The Akaike information criterion (AIC) of the null model (AIC = 1,293,904 with df = 4) will act as a benchmark for assessing the fit of subsequent models.

To test the two research hypotheses I estimate two models. Model 1 (results shown in Table 2), estimating the unadjusted trend of the life satisfaction advantage of being married, tests the first hypothesis. This model contains the individual-level predictors, as well as the trend of life satisfaction and the trend of the life satisfaction advantage of being married and their interactions with gender.

Model 2 (shown in Table 2) includes also the country- and country-wave-level variables, as well as the interactions of contextual variables with being married. Accounting for the interaction of the life satisfaction advantage of being married with contextual specialization allows verifying the second hypothesis. Note that to conclude that the results support this hypothesis, two conditions need to be met. First, the interaction of marital status with the changes of contextual gender specialization should be positive and significant. Second, the trend of life satisfaction advantage of being married should decrease after the inclusion of contextual specialization in the model.

The comparison of AIC statistics between the null model and Models 1 and 2 informs that more complex models fit the data better than the simpler models (Model 1 vs. null model:

ΔAIC = 33,987, df = 25, p < 000; Model 2 vs. Model 1: ΔAIC = 340, df = 30, p < 000). Model 2 offers the best fit to the data.

Coefficients of individual-level predictors

In Model 2, married men were 3.1% more satisfied with their lives than the never married. For women the life satisfaction advantage of being married over the never married was 2.7%. These values are consistent with the literature (Diener et al., 2000).

Cohabitation was weaker but positively correlated with life satisfaction, and being widowed, divorced, or separated correlated with life satisfaction negatively. The correlation of separation with life satisfaction was strongly negative, which is consistent with the findings that the life satisfaction of divorcees is lowest during the periods right before and after divorce (Clark et al., 2008; Lucas, 2007). The coefficients of unemployment and health problems were negative, whereas the coefficients for education and family income were positive. The relationship between age and life satisfaction was U-shaped.

Selection

The coefficients for selection variables ("% married in age-sex-edu group" and "% married in age-sex-edu group^2", as well as their interactions with being married) were statistically significant for the linear but not for the quadratic component. Life satisfaction of unmarried persons who had higher probability of being married was on average lower than of those with lower probability of married. Life satisfaction of married persons did not correlate with the probability of marrying.

The overall trend of the life satisfaction advantage of being married

The first hypothesis stated that the life satisfaction advantage of being married declined, regardless of the country. Model 1 informs about the average trend of the life satisfaction

advantage of being married. The negative coefficient of the "Married x Year" variable informs that the advantage of being married decreased for men at rate of 0.09 per ten years. With the average advantage of being married of 0.36 such rate of decline suggests that, at a constant decline rate, the advantage of being married would decrease to zero within four decades. This trend resulted from increasing life satisfaction among the unmarried men ("Year" $\beta = 0.14$, $p = 0.004$) and a non-significant trend among the married men ("Year"+ "Married x Year": $\beta = 0.048$, $p = 0.315$).

Among women the trend of the life satisfaction advantage of being married did not change over time ("Married x Year" + "Woman x Married x Year": $\beta = -.009$, $p = 0.496$; this trends is statistically significantly more positive than the trend for men). The life satisfaction trend was positive, but statistically insignificant both among unmarried ("Year" + "Woman x Year": $\beta = .087$, $p = 0.069$) and among married women ("Year" + "Woman x Year" + "Married x Year" + "Woman x Married x Year": $\beta = 0.077$, $p = 0.103$).

These results support the first hypothesis for men, but not for women. Among men, the life satisfaction advantage of being married declined over time, disregarding the country, from 0.54 in 1981 to 0.28 in 2009. Among women, the life satisfaction advantage of being married did not change over time; the predicted advantage declined slightly from 0.38 in 1981 to 0.36 in 2009.

Decline in specialization and the life satisfaction advantage of being married

Results of Model 2 (Table 2) do not support the second hypothesis, i.e. there is no evidence that the decline of contextual specialization explains the declining life satisfaction advantage of being married. Statistically insignificant interaction terms "Married x ΔSpecialization" and "Married x μSpecialization" indicate that neither the within-country changes of level of specialization

(ΔSpecialization) nor the cross country differences of specialization (μSpecialization) correlate with the life satisfaction advantage of being married.

Other correlates of the life satisfaction advantage of being married

Included primarily as controls, the changes over time of other macro factors were statistically significantly related to the life satisfaction advantage of being married. In particular, economic growth (ΔGDP) and the growing divorce ratio (Δdivorce ratio) correlated not only with higher life satisfaction overall, but also with a greater life satisfaction advantage of being married. Expanding social rights of women significantly correlated with the declining life satisfaction advantage of being married.

The size of the life satisfaction advantage of being married correlated also with some cross-country differences. The advantage of married persons over the unmarried was larger in countries with higher GDP (μGDP) and in developing countries, and it was lower in countries with stronger protection of social rights of women, higher divorce ratio, and higher fertility rate. Moreover, the life satisfaction of unmarried persons correlated positively with higher GDP, living in a developing country, stronger protection for the social rights of women, and with lower levels of gender specialization (μSpecialization).

Robustness checks

The increasing life satisfaction of unmarried persons may partly reflect the growing acceptance of divorce (Kalmijn, 2010). To exclude this factor, I re-estimated Model 1 allowing for a different trend of life satisfaction among the divorced or separated persons. The results show that the life satisfaction trend of divorced or separated persons did not differ significantly from the trend of the other unmarried. The estimates of trends of the life satisfaction advantage of being

married, as well as the estimated trends of life satisfaction of married and unmarried persons do not differ from those obtained in Model 1.

Contextual specialization may better reflect gender arrangements in young couples than gender arrangements of older couples, therefore I re-estimated Model 2 allowing for a different life satisfaction advantage of being married among persons aged 39 years or younger, different trend of life satisfaction in this group, and different effect of contextual specialization. The unmarried younger persons are on average less satisfied with their lives than unmarried older persons and the life satisfaction advantage of being married is larger in the younger group ($\beta = 0.35$, $p < 0.000$) than in the older group ($\beta = 0.24$, $p < 0.000$). However, changes of contextual specialization do not statistically significantly correlate with life satisfaction advantage of being married in any of the groups.

Because of the heterogeneous sample of countries it is possible that current results are the outcome of a specific subsample. Therefore, I re-estimated Models 1 and 2 allowing for different trends of life satisfaction in developing and developed countries. Re-estimation of Model 1 informs about the trends of life satisfaction advantage from marriage in both groups of countries. In developing countries the advantage from marriage declined for men ($\beta = -0.14$, $p < 0.000$) and for women ($\beta = -.06$, $p = 0.042$), which was an outcome of a non-significant trends of life satisfaction among both unmarried and married men and women. In developed countries the life satisfaction advantage declined only for men ($\beta = -0.08$, $p < 0.000$), whereas for women the change was not significantly different from zero ($\beta = -0.003$, $p = 0.849$). This process was a result of increasing life satisfaction among single men ($\beta = 0.16$, $p = 0.002$) and women ($\beta = 0.11$, $p = 0.039$), combined with the increasing life satisfaction of married women ($\beta = 0.11$, $p = 0.033$) and a non-significant trend among married men. Results of re-estimation of Model 2

showed that changes of contextual specialization correlated with the life satisfaction advantage of being married in developed countries ($\beta = 0.50$, $p = 0.017$ among men and $\beta = 0.39$, $p = 0.047$ among women). In developing countries these relationships were statistically insignificant. The relationship in developed countries was driven by a negative correlation between the contextual gender specialization and the life satisfaction of unmarried persons ($\beta = -1.04$, $p = 0.046$ for men and $\beta = -.91$, $p = 0.079$ for women). Importantly, the trend of life satisfaction advantage of being married estimated in Model 2 was not considerably smaller than the trend estimated in Model 1 (men in developed countries: $\beta = -.087$, $p = 0.003$; women in developed countries: $\beta = -.019$, $p = 0.510$; men in developing countries: $\beta = -.13$, $p < 0.000$, women in developing countries: $\beta = -.061$, $p = 0.070$), which indicates that the macro factors did not explain the trend of the life satisfaction advantage of being married.

DISCUSSION

The goal of this analysis was to test the hypothesis that the decline of the life satisfaction advantage of being married is a general trend and not an exclusive feature of the US. The results supported this hypothesis for men and showed that over the period 1981-2009 the life satisfaction advantage of married men over unmarried men declined from 0.54 to 0.28 (on a scale from 0 to 10). This decline resulted from the increasing life satisfaction of unmarried men, and the constant life satisfaction of married men. In the same period women did not experience a significant decline of the life satisfaction advantage of being married. The average life satisfaction of both married and unmarried women remained unchanged.

The analysis also documented that the life satisfaction advantage of being married decreased for men both in developed and developing countries. For women the trend was more

positive than for men in both groups of countries: it was insignificant in developed countries and weakly negative in developing countries. Whereas the life satisfaction of married and unmarried men and women in developing countries changed little, in developed countries life satisfaction increased in all groups except for married men.

These results lead us to conclude that—even though marriage remains a preferred living arrangement for many persons—life satisfaction of the unmarried men, as well as of the unmarried women in developed countries, was increasing, reducing the life satisfaction advantage of being married especially for men. This is consistent with the sometimes expressed opinion that contemporary societies create good conditions for a variety of life choices and living arrangements. Furthermore, the results suggest that the changes which took place over time in developed societies benefited married women more than they benefited married men, perhaps shaping marriage more to women's advantage. Such change did not occur in developing countries.

Further, this analysis tested the hypothesis that the change of the life satisfaction advantage of being married was shaped by the change of the contextual gender specialization. The results show that the life satisfaction advantage of being married statistically significantly correlated with the changes of contextual specialization only in developed countries. Specifically, in developed countries the unmarried persons benefited from the declining contextual gender specialization, whereas the life satisfaction of married persons was not affected by this change. Hence, the declining contextual gender specialization did not erode the life satisfaction of married couples. Moreover, the trend of life satisfaction advantage of being married did not change after including gender specialization in the estimation model, which leads

to conclude that the changes of contextual gender specialization do not explain the decreasing life satisfaction advantage of being married for men.

These results are important, because some policies attempt to strengthen the institution of marriage by creating incentives for gender-specialized division of work. (Such policies include, for example, tax systems discouraging the employment of a second earner in a couple or the provision of longer childcare leaves for women.) This study suggests that policies to strengthen the gender-traditional family arrangements may not be an efficient tool for increasing the life satisfaction of married couples. This result supports the claim that women's employment and egalitarian gender roles do not put at risk the well-being of marriages (previously formulated by, e.g. Oppenheimer, 1997; Rogers & DeBoer, 2001). In other words, social environments that push women to assume homemakers' roles seem to bring no inherent advantages to marriages. The current study is the first to demonstrate this result from a broad comparative perspective.

The analysis also identified other macro factors whose changes correlate with the life satisfaction advantage of being married. Growing GDP correlated positively with life satisfaction of unmarried persons; it also correlated positively with the life satisfaction advantage of being married. In other words, married people benefit more from improving economic conditions than unmarried ones. This is consistent with the observation that economic hardship affects particularly negatively the well-being of married persons (Rogers and DeBoer, 2001). Moreover, GDP growth plausibly liberates people from the need to marry, and it eliminates the reasons to tolerate bad marriages. Similarly as in case of GDP, also growing divorce rate positively correlated with life satisfaction of unmarried persons and with the life satisfaction advantage of being married. These results are consistent with the observation that divorces dissolve unhappy and abusive marriages (see also Stevenson & Wolfers, 2006, on the consequences of introduction

of no-fault divorce). These two sets of results suggest that policies supporting economic development and liberal divorce regulations may positively contribute to the life satisfaction of both married and unmarried persons.

There are limitations to this research. First, this study could not distinguish between first and subsequent marriages (Cherlin, 2004). However, Soons et al. (2009) showed that a re-marriage allows returning to the pre-separation levels of life satisfaction, which suggests that the inability to control for this factor does not necessarily create a considerable bias. The study also did not control for the duration of marriages. The process of adaptation gradually decreases the initially high life satisfaction advantages of marriage (Clark et al., 2008; Soons et al., 2009). Consistently with this, one of the robustness checks showed that life satisfaction advantage of being married was larger among younger persons. This factor could bias the results if the average duration of marriages differed systematically across countries and correlated with the explanatory factors. This may be the case for the divorce rates this may provide an additional possible explanation of the positive correlation between the divorce rates and the life satisfaction advantage of being married: where the divorce rate is higher, the average duration of marriages is shorter and thus the average life satisfaction advantage of being married is larger. Finally, the control for selection in this study deserves a comment. I used a variable measuring the percentage of married people in an age-gender-education group in a given country and year. Although this is not a perfect measurement, it is probably the only feasible solution for cross-sectional data. Use of comparative panel data, or data measuring the psychological traits of spouses (for this suggestion, see: Huston & Melz, 2004), could solve this problem; they are, however, unavailable. This and other issues should still be addressed by future research.

Overall, this research leaves us with two take home messages. First, the results suggest that developed countries experienced a general shift away from men's advantage in marriage. In developed, but not in developing countries, the average life satisfaction of unmarried men and women, as well as of married women increased over the last three decades. The only group whose life satisfaction remained constant were married men. This change was not explained by declining gender specialization or other factors, such as increasing social of political rights of women.

Second, the analysis suggests a different source of life satisfaction advantages to being married than gender specialization. The specialization theory presents marriage as an arrangement that allows benefiting from exchange of productive skills thus raising the total household productivity over the sum of the productivities of the spouses. In other words, marriage is seen as advantageous because it responds to economic necessities. In contrast to this approach, the results of this study suggest that the advantages of marriage are greater where the economic necessity is lower. The life satisfaction advantage of being married grew together with increasing GDP and divorce rate, which suggests that the advantages of marriage are greater not under the conditions of necessity, but in the conditions of free choice. This conclusion is consistent with the literature addressing the transformation of contemporary marriages from an arrangement that satisfies lower level practical needs to a field of personal accomplishment and self-fulfillment.

REFERENCES

Adams, B. N. (2004). Families and Family Study in International Perspective. *Journal of Marriage and Family*, *66*(5), 1076–1088.

Alesina, A., & Giuliano, P. (2013). Family ties Ties. *National Bureau of Economic Research*.

Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences Associated with Work-To-Family Conflict: A Review and Agenda for Future Research. *Journal of Occupational Health Psychology*, *5*(2), 278.

Amato, P. R., Johnson, D. R., Booth, A., & Rogers, S. J. (2003). Continuity and Change in Marital Quality Between 1980 and 2000. *Journal of Marriage and Family*, *65*(1), 1–22.

Becker, G. S. (1981). *A Treatise on the Family* (No. beck81-1). National Bureau of Economic Research, Inc.

Becker, G. S. (1985). Human Capital, Effort, and The Sexual Division of Labor. *Journal of Labor Economics*, S33–S58.

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is Anyone Doing the Housework? Trends in the Gender Division of Household Labor. *Social Forces*, *79*(1), 191–228.

Brewster, K. L., & Rindfuss, R. R. (2000). Fertility and Women's Employment in Industrialized Nations. *Annual Review of Sociology*, 271–296.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, London, New Dehli: Sage Publications.

Burgess, S., Propper, C., & Aassve, A. (2003). The Role of Income in Marriage and Divorce Transitions Among Young Americans. *Journal of Population Economics*, *16*(3), 455–475.

Cherlin, A. J. (2004). The Deinstitutionalization of American Marriage. *Journal of Marriage and Family*, *66*(4), 848–861.

Cingranelli, D. L., & Richards, D. L. (2008). *The Cingranelli-Richards Human Rights Dataset Version 2008.03.12*. Retrieved from http://www.humanrightsdata.org

Clark, A. E., Diener, E., Georgellis, Y., & Lucas, R. E. (2008). Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis. *The Economic Journal*, *118*(529), F222–F243.

Cohen, P. N. (2002). Cohabitation and the Declining Marriage Premium for Men. *Work and Occupations*, *29*(3), 346–363.

Corra, M., Carter, S. K., Carter, J. S., & Knox, D. (2009). Trends in Marital Happiness by Gender and Race, 1973 to 2006. *Journal of Family Issues*, *30*(10), 1379–1404.

Diener, E., Gohm, C. L., Suh, E., & Oishi, S. (2000). Similarity of the Relations Between Marital Status And and Subjective Well-Being Across Cultures. *Journal of Cross-Cultural Psychology*, *31*(4), 419–436.

Esping-Andersen, G., Boertien, D., Bonke, J., & Gracia, P. (2013). Couple Specialization in Multiple Equilibria. *European Sociological Review*, jct004.

Evans, M. D. R., & Kelley, J. (2004). Effect of Family Structure on Life Satisfaction: Australian Evidence. *Social Indicators Research*, *69*(3), 303–349.

EVS. (2011). *European Values Study 1981-2008, Longitudinal Data File.* GESIS Data Archive, Cologne, ZA4804 Data File Version 2.0.0. doi: 10.4232/1.11005

Finkel, E. J., Hui, C. M., Carswell, K. L., & Larson, G. M. (2014). The Suffocation of Marriage: Climbing Mount Maslow without Enough Oxygen. *Psychological Inquiry, 25*(1), 1-41.

Frijters, P., Haisken-DeNew, J. P., & Shields, M. A. (2004). Money Does Matter! Evidence from Increasing Real Income and Life Satisfaction in East Germany Following Reunification. *American Economic Review*, 730–740.

Glenn, N. D. (1991). The Recent Trend in Marital Success in the United States. *Journal of Marriage and Family*, *53*(2), 261–270.

Glenn, N. D., & Weaver, C. N. (1988). The Changing Relationship of Marital Status to Reported Happiness. *Journal of Marriage and the Family*, *50*, 317–324.

Gove, W. R., Style, C. B., & Hughes, M. (1990). The Effect of Marriage on the Well-Being of Adults. A Theoretical Analysis. *Journal of Family Issues*, *11*(1), 4–35.

Hakim, C. (2003). A New Approach to Explaining Fertility Patterns: Preference Theory. *Population and Development Review*, *29*(3), 349–374.

Hansen, T. (2012). Parenthood and Happiness: A Review of Folk Theories Versus Empirical Evidence. *Social Indicators Research*, *108*(1), 29–64.

Heston, A., Summers, R., & Aten, B. (2012). *Penn World Table Version 7.1*. Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania. Retrieved from https://pwt.sas.upenn.edu/

Hofferth, S. L. (2005). Secondary Data Analysis In in Family Research. *Journal of Marriage and Family*, *67*(4), 891–907.

Hox, J. (2010). *Multilevel Analysis: Techniques and Applications, Second Edition*. Routledge.

Huston, T. L., & Melz, H. (2004). The Case for (Promoting) Marriage: The Devil is in the Details. *Journal of Marriage and Family*, *66*(4), 943–958.

Kalmijn, M. (2007). Explaining Cross-National Differences in Marriage, Cohabitation, and Divorce in Europe, 1990-2000. *Population Studies*, *61*(3), 243-263. (PMID: 17979001)

Kalmijn, M. (2010). Country Differences in the Effects of Divorce on Well-Being: The Role of Norms, Support, and Selectivity. *European Sociological Review*, *26*(4), 475-490.

Lee, G. R., Seccombe, K., & Shehan, C. L. (1991). Marital status and personal happiness: An analysis of trend data. *Journal of Marriage and the Family, 53*(4), 839-844.

Lee, K. S., & Ono, H. (2012). Marriage, Cohabitation, and Happiness: A Cross-National Analysis of 27 Countries. *Journal of Marriage and Family, 74*(5), 953-972.

Lesthaeghe, R. (2010). The Unfolding Story of the Second Demographic Transition. *Population and Development Review, 36*(2), 211-251.

Lucas, R. E. (2007). Adaptation and the Set-Point Model of Subjective Well-Being. *Current Directions in Psychological Science*, *16*(2), 75–79.

Luke, D. A. (2004). *Multilevel Modelling*. Thousand Oaks, CA: Sage.

Lundberg, S. (2012). Personality and Marital Surplus. *IZA Journal of Labor Economics, 1*(1), 1-21.

Lundberg, S., & Pollak, R. A. (2007). The American Family and Family Economics *(No. w12908). National Bureau of Economic Research.*

Lundberg, S., & Pollak, R. A. (2013). Cohabitation and the Uneven Retreat from Marriage in the US, 1950-2010 *(No. w19413). National Bureau of Economic Research.*

Mastekaasa, A. (1994). Marital Status, Distress and Well-Being: An International Comparison. *Journal of Comparative Family Studies*, *25*(2), 183–205.

McRae, S. (2003). Constraints and Choices in Mothers' Employment Careers: A Consideration of Hakim's Preference Theory. *The British Journal of Sociology*, *54*(3), 317–338.

Oppenheimer, V. K. (1994). Women's Rising Employment and the Future of the Family in Industrial Societies. *Population and Development Review*, 293–342.

Oppenheimer, V. K. (1997). Women's Employment and the Gain to Marriage: The Specialization and Trading Model. *Annual Review of Sociology*, 431–453.

Orloff, A. S. (1993). Gender and the Social Rights of Citizenship: The Comparative Analysis of Gender Relations and Welfare States. *American Sociological Review*, 303–328.

Parsons, T. (1949). The Social Structure of the Family. In R. N. Anshen (Ed.), *The Family: Its Function and Destiny* (p. 173-201). Harper.

Popenoe, D. (1993). American Family Decline, 1960-1990: A Review and Appraisal. *Journal of Marriage and the Family*, *55*, 527-555.

Rogers, S. J., & Amato, P. R. (2000). Have Changes in Gender Relations Affected Marital Quality? *Social Forces*, *79*(2), 731–753.

Rogers, S. J., & DeBoer, D. D. (2001). Changes in Wives' Income: Effects on Marital Happiness, Psychological Well-Being, and the Risk of Divorce. *Journal of Marriage and Family*, *63*(2), 458–472.

Ryan, J., Hughes, M., & Hawdon, J. (1998). Marital Status, General-- Life Satisfaction and the Welfare State. *International Journal of Comparative Sociology*, *39*(3), 224–236.

Sayer, L. C., & Bianchi, S. M. (2000). Women's Economic Independence and the Probability of Divorce. A Review and Reexamination. *Journal of Family Issues*, *21*(7), 906–943.

Schimmack, U., Krause, P., Wagner, G., & Schupp, J. (2010). Stability and Change of Well-Being: An Experimentally Enhanced Latent State-Trait- Error Analysis. *Social Indicators Research*, *95*, 19-31.

Schneider, L., & Schimmack, U. (2009). Self-Informant Agreement in Well-Being Ratings: A Meta-Analysis. *Social Indicators Research*, *94*, 363-376.

Schultz Lee, K., & Ono, H. (2012). Marriage, Cohabitation, and Happiness: A Cross-National Analysis of 27 Countries. *Journal of Marriage and Family*, *74*(5), 953–972.

Snijders, T. A. (2005a). Fixed and Random Effects. In B. Everitt & D. Howell (Eds.), *Encyclopedia of Statistics in Behavioral Science* (Vol. 2, p. 664-665). Willet.

Snijders, T. A. (2005b). Power and Sample Size in Multilevel Modeling. In B. Everitt & D. Howell (Eds.), *Encyclopedia of Statistics in Behavioral Science* (Vol. 3, p. 1570-1573). Wiley.

Soons, J. P., Liefbroer, A. C., & Kalmijn, M. (2009). The Long- Term Consequences of Relationship Formation for Subjective Well-Being. *Journal of Marriage and Family*, *71*(5), 1254–1270.

Soons, J. P., & Kalmijn, M. (2009). Is Marriage More Than Cohabitation? Well-Being Differences in 30 European Countries. *Journal of Marriage and Family*, *71*(5), 1141–1157.

Stack, S., & Eshleman, J. R. (1998). Marital Status and Happiness: A 17- Nation Study. *Journal of Marriage and Family*, *60*(2), 527–536.

Steptoe, A., & Wardle, J. (2005). Positive Affect and Biological Function in Everyday Life. *Neurobiology of Aging*, *26*(1), 108–112.

Stevenson, B., & Wolfers, J. (2006). Bargaining in the shadow Shadow of the Law: Divorce Laws and Family Distress. *The Quarterly Journal of Economics*, *121*(1), 267–288.

Stevenson, B., & Wolfers, J. (2007). Marriage and Divorce: Changes and their Driving Forces. *Journal of Economic Perspectives, 21*(2).

Stutzer, A., & Frey, B. (2006). Does Marriage Make People Happy, or do Happy People Get Married? *Journal of Socio-Economics*, *35*(2), 326–347.

Treas, J., van der Lippe, T., & Tai, T.-o. C. (2011). The Happy Homemaker? Married Women's Well-Being in Cross- National Perspective. *Social Forces*, *90*(1), 111-132.

United Nations. (2013). *World Fertility Data 2012* (dataset No. POP/DB/Fert/Rev2012). Department of Economic and Social Affairs, Population Division.

Urry, H. L., Nitschke, J. B., Dolski, I., Jackson, D. C., Dalton, K. M., Mueller, C. J., … Davidson, R. J. (2004). Making a Life Worth Living. *Psychological Science*, *15*(6), 367-372.

Vanassche, S., Swicegood, G., & Matthijs, K. (2012). Marriage and Children as a Key to Happiness? Cross-National Differences in the Effects of Marital Status and Children on Well-Being. *Journal of Happiness Studies*, 1–24.

Verbakel, E. (2012). Subjective Well-Being by Partnership Status and its Dependence on the Normative Climate. *European Journal of Population/Revue Européenne de Démographie*, *28*(2), 205–232.

Waite, L. (2000). Trends in Men's and Women's Well-Being in Marriage. In L. J. Waite, C. Bachrach, M. Hindin, E. Thomson, & A. Thornton (Eds.), *The Ties that Bind: Perspectives on Marriage and Cohabitation* (p. 368-392). New York: Aldine de Gruyter.

Winkelmann, L., & Winkelmann, R. (1998). Why are the Unemployed so Unhappy? Evidence From Panel Data. *Economica*, *65*(257), 1–15.

WVS. (2009). *World Values Survey 1981-2008, Official Aggregate v.20090901*. World Values Survey Association (www.worldvaluessurvey.org). Aggregate File Producer: ASEP/JDS, Madrid.

Zimmermann, A., & Easterlin, R. (2006). Happily Ever After? Cohabitation, Marriage, Divorce, and Happiness in Germany. *Population and Development Review*, *32*(3), 511–528.

Table 1. Descriptive statistics.

Country	N	Nr of waves	% women	First wave Year	Survey	N	Life satisfaction married	Life satisfaction Unmarried	Specialization	Last wave Year	Survey	N	Life satisfaction married	Life satisfaction unmarried	Specialization
Albania	3533	3	50.6	1998	WVS	999	4.83	4.61	38.5	2008	EVS	1534	6.37	6.31	17.3
Algeria	1282	1	49.3	2002	WVS	1282	6.02	5.39	41.0						
Argentina	4363	4	53.0	1991	WVS	1002	7.43	7.00	49.6	2006	WVS	1002	7.88	7.59	53.3
Armenia	3500	2	54.7	1997	WVS	2000	4.23	4.45	41.2	2008	EVS	1500	5.68	5.63	48.3
Australia	4697	3	52.3	1981	WVS	1228	8.13	7.43	51.6	2005	WVS	1421	7.57	6.90	19.7
Austria	2970	2	58.8	1990	EVS	1460	8.04	7.60	42.3	2008	EVS	1510	7.88	7.24	22.2
Azerbaijan	3507	2	50.5	1997	WVS	2002	5.37	5.43	28.0	2008	EVS	1505	5.74	6.08	7.9
Bangladesh	3025	2	44.6	1996	WVS	1525	6.48	6.19	66.6	2002	WVS	1500	5.74	5.93	87.0
Belarus	3592	2	58.4	1996	WVS	2092	4.45	4.16	4.9	2008	EVS	1500	6.30	5.90	7.9
Belgium	5446	3	51.7	1981	EVS	1145	7.58	7.01	45.7	2009	EVS	1509	7.90	7.31	17.0
Brazil	4431	3	52.9	1991	WVS	1782	7.66	7.07	58.9	2006	WVS	1500	7.86	7.49	32.9
Bulgaria	4607	4	54.7	1990	EVS	1034	5.16	4.68	5.2	2008	EVS	1500	5.96	5.40	8.6
Burkina Faso	1534	1	48.9	2007	WVS	1534	5.55	5.60	59.3						
Canada	7079	4	55.3	1982	EVS	1254	8.06	7.44	50.3	2006	WVS	2164	8.06	7.44	17.5
Chile	4700	4	53.3	1990	WVS	1500	7.68	7.41	65.3	2005	WVS	1000	7.41	7.10	59.5
China	5515	4	48.9	1990	WVS	1000	7.50	6.59	1.5	2007	WVS	2015	6.81	6.50	13.3
Colombia	6025	1	49.0	1997	WVS	3029			48.1	1998	WVS	2996	8.54	8.33	48.1
Croatia	1525	1	60.2	2008	EVS	1525	7.28	6.86	11.3						
Cyprus	2050	2	53.4	2006	WVS	1050	7.41	7.22	43.0	2008	EVS	1000	7.61	6.66	36.0
Czech Republic	2968	2	55.4	1998	WVS	1147	6.57	6.14	14.6	2008	EVS	1821	7.41	6.96	10.6
Denmark	3719	3	50.4	1981	EVS	1182	8.44	7.96	28.0	2008	EVS	1507	8.54	8.11	1.3
Dominican Republic	417	1	59.0	1996	WVS	417	7.12	7.13	32.9						
Egypt	6051	2	55.2	2000	WVS	3000	5.37	5.34	77.3	2008	WVS	3051	5.80	5.70	87.2
El Salvador	1254	1	52.9	1999	WVS	1254	7.83	7.29	60.9						
Estonia	2539	2	61.2	1996	WVS	1021	5.10	4.86	6.2	2008	EVS	1518	6.97	6.42	10.9
Ethiopia	1500	1	48.5	2007	WVS	1500	5.08	4.94	45.5						
Finland	3723	4	50.8	1990	EVS	588	7.72	7.60	5.8	2009	EVS	1134	7.91	7.40	5.3
France	4704	4	53.0	1981	EVS	1200	6.86	6.46	50.4	2008	EVS	1501	7.37	6.79	17.7

Table 1. *(continued)*

Country	N	Nr of waves	% women	First wave Year	Survey	N	Life satisfaction married	Life satisfaction unmarried	Specialization	Last wave Year	Survey	N	Life satisfaction married	Life satisfaction unmarried	Specialization
Georgia	3000	2	57.9	2008	EVS and WVS	3000	5.34	4.96	35.3						
Germany	10907	5	53.7	1981	EVS	1305	7.40	6.99	48.7	2008	EVS	2075	7.17	6.36	15.4
Ghana	1534	1	49.4	2007	WVS	1534	5.80	6.39	3.4						
Great Britain	5253	4	53.9	1981	EVS	1167	7.74	7.32	39.9	2009	EVS	1561	7.85	7.30	20.8
Greece	1500	1	56.7	2008	EVS	1500	7.02	6.59	40.0						
Guatemala	1000	1	51.1	2005	WVS	1000	8.16	7.78	58.2						
Hungary	3162	3	52.5	1991	EVS	999	6.13	5.80	6.5	2008	EVS	1513	6.59	6.04	4.7
Iceland	2437	3	49.7	1984	EVS	927	8.29	7.78	22.6	2009	EVS	808	8.23	7.91	7.3
India	8543	4	44.6	1990	WVS	2500	6.80	6.49	65.2	2006	WVS	2001	5.79	5.82	67.4
Indonesia	3019	2	48.5	2001	WVS	1004	6.47	7.04	31.8	2006	WVS	2015	6.61	6.98	52.1
Iran	5199	2	48.1	2000	WVS	2532	6.40	6.37	64.2	2007	WVS	2667	6.57	6.21	75.4
Iraq	2701	1	51.6	2006	WVS	2701	4.39	4.65	85.6						
Ireland	3230	3	55.9	1981	EVS	1217	8.17	7.47	77.6	2008	EVS	1013	8.09	7.60	44.1
Italy	5897	4	51.4	1981	EVS	1348	6.99	6.20	57.1	2009	EVS	1519	7.39	6.89	26.8
Japan	4523	4	53.2	1990	WVS	1011	6.68	6.07	45.6	2005	WVS	1096	7.09	6.74	38.4
Jordan	1223	1	51.3	2001	WVS	1223	5.71	5.37	85.1						
Kyrgyzstan	1043	1	55.4	2003	WVS	1043	6.61	6.29	44.0						
Latvia	2706	2	59.8	1996	WVS	1200	4.87	4.93	11.3	2008	EVS	1506	6.47	6.29	16.4
Lithuania	2509	2	52.7	1997	WVS	1009	5.02	4.93	13.8	2008	EVS	1500	6.44	6.34	16.3
Luxembourg	1610	1	50.6	2008	EVS	1610	8.08	7.72	31.4						
Macedonia	3550	3	46.2	1998	WVS	995	5.70	5.71	17.8	2009	EVS	1500	6.99	6.69	14.1
Malaysia	1201	1	50.1	2006	WVS	1201	7.01	6.67	50.2						
Mali	1534	1	49.6	2007	WVS	1534	6.02	6.28	50.2						
Malta	1500	1	62.4	2008	EVS	1500	8.01	7.58	67.3						
Mexico	6990	4	49.3	1990	WVS	1531	7.56	7.28	51.5	2005	WVS	1560	8.43	7.98	74.2
Moldova	4589	4	53.7	1996	WVS	984	3.74	3.68	11.8	2008	EVS	1551	6.66	6.35	22.3
Morocco	3464	2	50.8	2001	WVS	2264	6.32	5.80	53.5	2007	WVS	1200	5.44	5.03	14.3

Table 1. *(continued)*

Country	First wave									Last wave					
	N	Nr of waves	% women	Year	Survey	N	Life satisfaction		Specialization	Year	Survey	N	Life satisfaction		Specialization
							married	unmarried					married	unmarried	
Netherlands	4842	4	55.1	1981	EVS	1221	7.91	7.48	66.6	2008	EVS	1554	8.14	7.75	20.7
New Zealand	1201	1	54.8	1998	WVS	1201	7.94	7.38	19.3						
Nigeria	5019	3	47.5	1990	WVS	1001	6.69	6.48	16.6	2000	WVS	2022	6.72	7.01	34.9
Norway	5532	5	49.2	1982	EVS	1051	8.06	7.52	28.3	2008	EVS/WVS	2115	8.29	7.75	3.9
Pakistan	2000	1	48.0	2001	WVS	2000	4.77	5.02	83.5						
Peru	4212	3	50.9	1996	WVS	1211	6.53	6.23	55.3	2008	WVS	1500	7.17	6.94	45.8
Philippines	2400	2	50.0	1996	WVS	1200	6.82	6.88	39.5	2001	WVS	1200	6.59	6.81	57.0
Poland	3492	3	52.9	1990	EVS	982	6.50	6.63	19.9	2008	EVS	1510	7.29	7.11	16.6
Portugal	2738	2	56.4	1990	EVS	1185	7.21	6.85	41.8	2008	EVS	1553	6.69	6.14	14.6
Romania	5607	4	53.4	1993	EVS	1103	6.08	5.48	8.9	2008	EVS	1489	6.87	6.59	19.9
Russian Federation	5577	3	59.0	1995	WVS	2040	4.65	4.14	11.6	2008	EVS	1504	6.78	6.24	18.9
Rwanda	1507	1	50.6	2007	WVS	1507	4.88	5.05	29.8						
Saudi Arabia	1502	1	49.8	2003	WVS	1502	7.33	7.21	80.8						
Slovakia	2604	2	55.6	1998	WVS	1095	6.20	5.78	10.8	2008	EVS	1509	7.32	6.69	6.0
Slovenia	4445	4	53.7	1992	EVS	1035	6.38	6.12	10.0	2008	EVS	1366	7.63	7.39	5.6
South Africa	11659	4	51.1	1990	WVS	2736	7.07	6.25	36.2	2007	WVS	2988	7.53	6.98	24.9
South Korea	2400	2	49.9	2001	WVS	1200	6.35	5.92	48.9	2005	WVS	1200	6.41	6.36	55.6
Spain	11570	7	52.6	1981	EVS	2303	6.82	6.22	78.3	2008	EVS	1500	7.42	7.18	35.2
Sweden	4153	4	50.0	1982	EVS	954	8.25	7.63	13.8	2009	EVS	1187	8.13	7.12	0.5
Switzerland	5125	4	53.3	1989	WVS	1400	8.55	8.07	54.1	2008	EVS	1272	8.25	7.79	28.5
Tanzania	1171	1	44.0	2001	WVS	1171	3.90	3.82	30.5						
Thailand	1534	1	51.0	2007	WVS	1534	7.21	7.22	9.4						
Trinidad And Tobago	1002	1	55.1	2006	WVS	1002	7.68	7.00	40.8						

Table 1. *(continued)*

Country	N	Nr of waves	% women	First wave Year	Survey	N	Life satisfaction married	Life satisfaction unmarried	Specialization	Last wave Year	Survey	N	Life satisfaction married	Life satisfaction unmarried	Specialization
Turkey	10068	5	51.3	1990	WVS	1030	6.52	6.14	79.2	2009	EVS	2384	6.61	6.29	85.9
Uganda	1002	1	49.9	2001	WVS	1002	5.44	5.76	22.8						
Ukraine	5318	3	61.5	1996	WVS	2811	4.06	3.69	9.3	2008	EVS	1507	6.17	5.79	21.1
United States	6906	4	53.0	1982	EVS	2325	7.92	7.37	42.7	1999	WVS	1200	8.05	7.30	20.4
Uruguay	2000	2	57.3	1996	WVS	1000	7.47	6.73	38.8	2006	WVS	1000	7.58	7.37	41.4
Venezuela	1200	1	50.3	1996	WVS	1200	6.97	6.55	48.5						
Viet Nam	2495	2	49.5	2001	WVS	1000	6.58	6.30	15.8	2006	WVS	1495	7.25	6.69	10.1
Zambia	1500	1	49.3	2007	WVS	1500	6.11	6.04	39.5						
Zimbabwe	1002	1	50.0	2001	WVS	1002	3.92	3.98	21.7						

Source: WVS-EVS integrated data file 1981-2008.

Table 2. Multilevel Regression of Life Satisfaction on Individual- and Country-Level Predictors. *Model 1* Does Not, and *Model 2* Does Account for Contextual Gender Specialization and Other Macro-Factors, as well as their Interactions with Being Married.

	Model 1		Model 2	
	B	*p*	*β*	*p*
Individual-level variables:				
Never married	ref		ref	
Married	0.36	(0.000)***	0.31	(0.000)***
Cohabiting	0.13	(0.000)***	0.14	(0.000)***
Widowed	-0.11	(0.000)***	-0.10	(0.000)***
Divorced	-0.16	(0.000)***	-0.15	(0.000)***
Separated	-0.34	(0.000)***	-0.33	(0.000)***
Woman	0.14	(0.000)***	0.14	(0.000)***
Woman x Married	-0.04	(0.024)*	-0.04	(0.025)*
Employed or other marital status	ref		ref	
Housewife	0.10	(0.000)***	0.08	(0.000)***
Unemployed	-0.48	(0.000)***	-0.49	(0.000)***
Primary education	ref		ref	
Secondary education	0.04	(0.000)***	0.04	(0.000)***
Tertiary education	0.12	(0.000)***	0.12	(0.000)***
Age	0.00	(0.258)	0.00	(0.367)
Age^2	0.00	(0.000)***	0.00	(0.000)***
Household income	0.14	(0.000)***	0.14	(0.000)***
Income missing (flag)	0.09	(0.000)***	0.09	(0.000)***
Has children	-0.03	(0.037)*	-0.02	(0.147)
Health problems	-0.68	(0.000)***	-0.68	(0.000)***
Country-year variables				
Year (10yrs)	0.14	(0.004)**	-0.34	(0.000)***
Δ Specialization			-0.62	(0.172)
Δ Political rights of women			-0.01	(0.957)
Δ Social rights of women			0.13	(0.214)
Δ Divorce ratio			7.85	(0.000)***
Δ GDP, ln			1.10	(0.000)***
Δ fertility rate			-0.04	(0.841)

Country-year variables x married				
Married x Year (10yrs)	-0.09	(0.000)***	-0.12	(0.000)***
Married x Δ Specialization			0.28	(0.122)
Married x Δ Political rights of women			0.03	(0.288)
Married x Δ Social rights of women			-0.05	(0.039)*
Married x Δ Divorce ratio			1.84	(0.001)***
Married x Δ GDP, ln			0.21	(0.000)***
Married x Δ fertility rate			-0.00	(0.950)
Country-year variables x gender				
Woman x Year (10yrs)	-0.05	(0.001)***	-0.04	(0.028)*
Woman x Δ Specialization			0.12	(0.503)
Country-year variables x gender x married				
Woman x Married x Year (10yrs)	0.08	(0.000)***	0.07	(0.004)**
Woman x Married x Δ Specialization			0.04	(0.498)
Country variables				
μ Specialization			-0.67	(0.040)*
μ Political rights of women			-0.04	(0.816)
μ Social rights of women			0.41	(0.000)***
μ Divorce ratio			-2.78	(0.139)
μ GDP, ln			0.35	(0.000)***
μ fertility rate			0.01	(0.812)
Developing country			0.85	(0.000)***
Country variables x gender				
Woman x μ Specialization			0.04	(0.498)
Country variables x married				
Married x μ Specialization			-0.07	(0.321)
Married x μ Political rights of women			0.02	(0.470)
Married x μ Social rights of women			-0.04	(0.032)*
Married x μ Divorce ratio			-0.79	(0.014)*
Married x μ GDP, ln			0.07	(0.000)***
Married x μ fertility rate			-0.09	(0.000)***
Married x Developing country			0.15	(0.000)***
Country variables x married x gender				
Woman x Married x μ Specialization			0.06	(0.445)
Selection				
Married x % married in age-sex-edu group	0.13	(0.009)**	0.12	(0.015)*
Married x % married in age-sex-edu group^2	-0.22	(0.092)	-0.17	(0.205)

% married in age-sex-edu group	-0.12	(0.000)***	-0.13	(0.000)***
% married in age-sex-edu group^2	0.13	(0.155)	0.15	(0.118)
Constant	6.18	(0.000)***	5.95	(0.000)***
Varying coefficients				
Country var(_cons)	0.69		0.09	
Country-year var(_cons)	0.23		0.24	
var(Residual)	4.33		4.32	
rho statistics, country	13%		2%	
rho statistics, country-year	4%		5%	
Summary statistics:				
Log-likelihood	-629,854		-629,729	
Model's df	29		59	
AIC	1,259,917		1,259,577	
Observations	292,525		292,525	
Nr of country-waves	211		211	
Nr of countries	87		87	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (exact p-values in parentheses)
Source: WVS-EVS integrated data file 1981-2008.