Parenthood and Happiness: Effects of Work-Family Reconciliation Policies in 22 OECD Countries

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ABSTRACT

In contrast to widespread cultural beliefs that parenthood improves the health and happiness of adults, research finds that parents report lower levels of emotional well-being than non-parents in many developed countries. However, we currently do not know whether the parenthood penalty in personal happiness is smaller in economically advanced countries where public policies intended to reduce the stress associated with parenthood are more generous. Drawing on Link and Phelan's (1995) argument about social conditions as fundamental causes of health inequalities, we examine whether the disparity in happiness between parents and nonparents is smaller in countries that provide more resources and social support to families than in countries that provide less assistance. Our analyses reveal that the parenthood gap in happiness is greater in the U.S. than in the other 21 OECD countries in our sample; they also indicate that larger disparities in happiness between parents and non-parents are due to less generous family policies, especially subsidized child care and paid leave. Our results shed light on macro-level causes of micro-level emotional processes and have important implications for public policy.

INTRODUCTION

The lower level of emotional well-being found among parents compared to nonparents in the United States is a vexing social problem that has captured the attention of social scientists, policy analysts, the media, and the public (Simon 2008; Umberson, Pudrovska, and Reczek 2010). This finding not only contradicts cultural beliefs that parenthood is pivotal for the development and maintenance of health and happiness in adulthood (Hansen 2011; Margolis and Myrskyla 2011), but is an anomaly in decades of research documenting the benefits of social roles and relationships for mental health. Despite increased interest in this issue, we currently do not know whether the parenthood penalty in well-being is unique to the U.S. or exists in other developed nations.

Given the paucity of comparative research on this topic, it is unclear whether the disparity in happiness between parents and nonparents is smaller in countries that provide more resources and social support to families such as paid work leaves, work flexibility, and childcare (see Kahneman et al, 2010 and Savolainen et al, 2001 for supporting evidence). What is clear is that, in contrast to the varying welfare state regimes that assist with work-family reconciliation in other countries (Esping-Anderson, 1990), American parents cope with the time, energy, and financial demands of parenthood through their own resources and social networks (Glass 2000; Gornick and Meyers 2003; Simon 2008), which is stressful and emotionally taxing.

In this paper, we use data from the 2006 and 2008 European Social Survey (ESS) as well as the 2007 and 2008 International Social Survey Programme (ISSP) to investigate cross-national variation in the parenthood gap in happiness – a global measure of emotional well-being – across 22 Organization for Economic Cooperation and Development (OECD) countries. We examine whether cross-national variation in the availability of state-provided family supports helps explain cross-national variation in the parenthood gap in this dimension of mental health. Drawing on Link and Phelan's (1995) argument about social conditions as fundamental causes of

health inequalities, we theorize that the larger policy context in which Americans parent is a *fundamental cause* of why they experience less happiness than their childless peers. We also expect that the parental status disparity in happiness is smaller in countries with strong family policies than in countries that provide minimal public assistance to parents such as the U.S.

BACKGROUND

Parental Status Differences in Emotional Well-Being in the U.S.

An abundance of research in the U.S. shows a significant negative association between parenthood and emotional well-being (Evenson and Simon 2005; Gilbert 2007; Glenn and McLanahan 1981; Gove and Geerken 1977; Hansen 2011; Kahneman et al., 2004; McLanahan and Adams 1987, 1989; Nomaguchi and Milkie 2003; Ross and Van Willigen 1996; Simon and Nath 2004; Umberson and Gove 1989; though see Nelson et al., 2013 for a dissenting view). This association varies in size depending on the personal and household characteristics of parents, but is evident in all types of households, among mothers and fathers, and across several dimensions of mental health – including generalized distress, depression and everyday negative and positive emotions such as anger and happiness (see Simon 2008 and Umberson et al., 2010).

Most of this research is based on comparisons between nonparents and parents residing with dependent children – a period in the adult life course when the time, energy, and financial demands of parenthood are greatest. While married and cohabiting parents are less distressed than single parents (Evenson and Simon 2005; McLanahan 1983; Pearlin and Johnson 1977; Simon 1998), studies repeatedly show that irrespective of marital status, parents with minor children in the household report significantly lower levels of well-being than adults not residing with young children – a group that includes childless adults and noncustodial and empty-nest parents (Evenson and Simon 2005; Nomaguchi and Milkie 2003; Ross and Van Willigen 1996).

Moreover, an accumulating body of work indicates that empty-nest parents do not enjoy greater emotional well-being than non-parents (Evenson and Simon 2005; Milkie, Bierman, and Schieman 2008; Koropeckyj-Cox 2002; Pudrovska 2008). This finding sharply contrasts with the cultural assumption that the emotional benefits of parenthood are greatest once children are grown. Indeed, Evenson and Simon's study (2005) indicates that there is *no* type of parent – including biological, adoptive, custodial, non-custodial, and step parents of both minor and adult children – in the U.S. reporting significantly better mental health than nonparents.

These findings represent an anomaly in research on the impact of social embeddedness on mental health; since the time of Durkheim's (1897) classic study of suicide, research finds that marriage and employment improve mental health (Simon 2013). Moreover, the lower level of emotional well-being experienced by parents in the U.S. is a timely and pressing policy issue, possibly fueling record levels of childlessness and contributing to poorer outcomes among U.S. children relative to those in other developed nations (U.S. Census Bureau 2006).

Why is Parenthood Associated with Lower Levels of Emotional Well-Being in the U.S.?

The predominant explanation of the parenthood gap in well-being is based on the stress process paradigm (Pearlin 1989) and argues that children increase adults' exposure to a variety of stressors. Stress exposure, in turn, increases symptoms of emotional distress, depression, and anxiety as well as negative emotions such as anger, while decreasing positive feelings such as happiness. Like other major adult social roles, parenthood provides individuals with personal gratification, a sense of purpose and meaning in life, social connections to others, and an important identity – which improve mental health. At the same time, the emotional rewards of having children are often overshadowed by the stress associated with parenthood in the U.S.

To date, researchers have identified a number of stressors parents routinely confront that undermine their well-being; parents of dependent children experience time and energy demands

(Avison, Ali, and Walters 2007), work-family conflict and overload (Blair-Loy 2003; Hochschild 1997; Nomaguchi and Milkie 2003; Nomaguchi, Milkie, and Bianchi 2005, Simon 1995), difficulties obtaining high quality, affordable childcare (Ross and Mirowsky 1988), and financial strain (McCrate 2005; Warren and Tyagi 2003). Not surprisingly, these stressors are greater among single than married parents (McLanahan 1983; Pearlin and Johnson 1977; Simon 1998). Socially disadvantaged parents are exposed to additional sources of parental strain, including the stress of living in unsafe neighborhoods with under-resourced schools as well as insufficient food and inadequate child and healthcare for their offspring (Edin and Kefalas 2005; Edin and Lein 1997; Heymann 2000). Parents of older children, particularly parents of children who are transitioning to adulthood, are exposed to other sources of stress such as the strain associated with helping finance their children's higher education, independent living, and health insurance at the same time they are looking ahead toward their own retirement (Furstenberg et al. 2004; Glenn and McLanahan 1981; Warren and Tyagi 2003). Offspring with health and/or behavior problems are an especially pernicious source of stress, irrespective of children's age (Early et al. 2002; Greenfield and Marks 2006; Ha et al., 2008; Pottie and Ingram 2008; Simon 1992).

However, while sociologists have provided important insight into the mediating role that stress exposure plays in the association between parenthood and mental health, they focus on *proximate* stressors and ignore *distal* sources of these stressors. Distal sources of stress, which are rooted in the larger social context in which Americans parent, may also shed light on why parents in the U.S. report lower levels of emotional well-being than nonparents. Link and Phelan (1995, 2000) refer to these sources of stress as fundamental causes of health inequalities.

The Fundamental Cause Argument

Link and Phelan introduced their paradigm-shifting fundamental cause argument almost two decades ago, attributing persistent social group disparities in mental and physical health to the

basic social conditions in which these groups are embedded. Although risk factors for individuals' health problems are well-studied, social factors that are more distal causes of health inequalities have received far less attention. Two key distal causes of health disparities are the unequal distribution of resources and social support across different social groups. These are fundamental causes because they allow some individuals to avoid or minimize stress as well as help them reduce the negative health impact of the stress to which they are exposed. In contrast, individuals who have fewer resources and less social support are not only more exposed but are also more vulnerable to the adverse health effects of stress. Link and Phelan caution that without attention to fundamental causes of health inequalities, societies run the risk of intervention strategies that target individual risk but are ultimately ineffective, while missing opportunities to adopt broad-based societal interventions that could produce substantial health benefits to all.

Link and Phelan's argument redirects health researchers' attention away from an almost exclusive focus on proximate stressors (downstream risk factors) to the broad social conditions that give rise to these stressors in the first place (upstream risk factors). Studies on the U.S support this argument with respect to socioeconomic status differences in access to resources and social support as well as health problems (Lutfey and Freese 2005; Phelan et al., 2010), while comparative research shows that citizens of countries providing universal health enjoy better health than persons residing in countries that do not (Olafsdottir 2007; Wilson 2009).

Although the fundamental cause argument was developed to explain socioeconomic inequalities in health, it may also explain parental status disparities in well-being in the U.S. *relative to* other developed nations. In his 94 country analysis, Stanca (2012) reports that the size of the parenthood penalty in well-being corresponds most to the level of financial strain experienced by parents. While work-family conflict and overload, childcare stress, and financial strain are individual risk factors for emotional distress among American parents, these proximate

stressors are rooted in the larger social, economic, and policy context of the U.S.

The American Context for Parenting

While most advanced industrialized nations have felt the pinch of increased global

competition, with domestic wage stagnation and insecure employment among all but the most

skilled workers, the extent to which these changes impact family life varies widely across

countries. The U.S. is almost singularly unusual in its failure to adapt social policies to the

decline in male breadwinning, making parenthood unusually expensive in the U.S. and fueling

high rates of dependency on mother's earnings. The U.S. Department of Agriculture (USDA

2012) estimates that a middle-income family can expect to spend $234,900 to raise a child born

in 2011 to age 17, adding a college degree almost doubles that figure given the privatized

financing of higher education (Lino and Carlson 2009). Combined with declines in real-wages

for working-class men and public assistance since the 1980's, low income parents experience

particularly acute financial struggles (Edin and Lein 1997; Hays 2007; Heymann 2000).[1]

Moreover, these costs are increasingly born by mothers rather than fathers (Bianchi and

Milkie 2010; Warren and Tyagi 2003). The 2010 U.S. Census indicates that over 70 percent of

children in the U.S. are raised in households in which all adults work outside the home, while the

Pew Research Center calculates that over four in 10 households with children are supported

solely or primarily by mothers' earnings (Wang, Parker, and Taylor 2013). However, the U.S.

has done little to ameliorate the incompatibility of full time employment and family care (Glass

2000; Lennon and Rosenfield 1995; Simon 1995, 2008) – the 1993 Family and Medical Leave

Act (FMLA) being the sole federal social policy developed to assist employed parents.[2]

Hochschild (1989,1997) was the first to document the "time bind" felt by employed

parents, especially mothers employed full-time. But its not just that American parents lack

childbirth leave and work significantly longer hours than their European counterparts (Gornick

and Meyers 2003; Jacobs and Gerson 2004), they also face labor management strategies that disadvantage caregivers (Lambert 2009). Hacker (2006) refers to this phenomenon as the "great risk shift" in which the increasingly deregulated employment system in the U.S. moves uncertainty and risk away from employers to employees and their families. With jobs bifurcated into part-time jobs with no benefits and erratic schedules and full-time jobs with benefits but no limits on weekly hours, parents have few options for reduced work to meet family care obligations. Coupled with the increase in non-standard evening and weekend hours as the U.S. moves to a 24/7 economy, these longer and more erratic employment hours erode marital stability, make child care difficult to coordinate (Presser 2003), and suppress breastfeeding (Noonan and Rippeyoung, 2012). This situation, difficult enough for dual-earner families, is even more stressful for the growing number of single parents in the U.S.

Child care and paid leave to care for sick children are essential for employed parents. While several European countries prefer to encourage maternal care of young children with long leaves and child allowances, the U.S. neither subsidizes maternal care nor publicly provided child care. Yet private sector childcare – the most common form of childcare next to family care in the U.S. – is often difficult to locate and use, of variable quality, and expensive, disproportionately taxing those parents with fewer financial resources and social connections (Heymann 2000). The mediocre *quality* of most nonparental childcare in the U.S, especially for working-class families (NICHD Early Child Care Research Network, 2000), creates further anxiety and stress among parents (Heymann, 2000; Ross and Mirowsky, 1988).

Because most workplace accommodations in the U.S. are employer-provided and market-driven, they tend to be available to workers with more market power rather than the employed parents most in need of assistance (Kelly and Kalev 2006). Research consistently demonstrates that employer provided family leave, work-time flexibility, and childcare assistance in the U.S.

are significantly more available to men, managerial and professional workers, and workers in large firms (McCrate 2002; Noonan and Glass, 2012; Osterman, 1995). The young, poorly educated, and single mothers most in need of workplace supports for parenting are least likely to receive them (Deitch and Huffman 2001; Lambert 2009; McCrate 2005).

Adding to the stress producing social conditions surrounding parenthood is the American tendency to perceive the challenges parents experience as a private matter rather than a social problem (Stearns 2004). These perceptions, and the absence of public policies that may alleviate some of the stress of parenthood, are themselves rooted in an individualistic culture that values personal rather than collective responsibility for raising healthy children (Folbre 2008). The lack of public policy provision in the form of paid parental leaves, work flexibility, as well as assistance with childcare, higher education, and healthcare has created *social and economic inequalities* between parents and nonparents in the U.S. The U.S. differs considerably from other advanced industrial societies that provide resources and social support to families in order to alleviate the personal costs and increase the emotional rewards of having children.

Publically Provided Resources and Supports for Parents in Other Advanced Societies

A substantial number of public policies across the European Union and English-speaking industrialized countries affect both the direct financial costs and indirect opportunity costs of parenthood.[3] We focus here on those policies that enable employment among mothers rather than subsidizing homemaking, given evidence that maternal employment better fits the aspirations of mothers (Esping-Anderson 2009; McDonald 2000). Along with entitlements such as universal health care and education for all citizens, many of these societies provide paid work leaves (including time to care for infants and paid sick and vacation days) as well as subsidized public sector childcare for employed parents (Gornick and Meyers 2003; Waldfogel 2001). Some of these nations also have strong work-time policies that enable parents to temporarily reduce

their work hours or set maximum statutory hours per week, while others support flexible work schedules for caregivers (Hegewisch 2005; Hegewisch and Gornick 2008). The U.S. is a clear outlier among this group of developed nations with its relatively weak and usually means-tested public provision for families, and its reliance on mostly private market-driven supports for parents. The social, economic, and cultural factors that gave rise to stronger work-family reconciliation policies in other countries are complex and were a societal response to falling fertility rates, mother headed households, and gender inequalities, among other factors (Esping-Anderson, 1990; Gauthier 1996; Orloff 1996; Wennemo 1992). Whatever their origin, publically provided resources and social support have reduced social and economic inequalities between parents and nonparents (Gornick and Meyers 2003; Heymann et al., 2007; Ray et al., 2009).

To the extent that public policy provision alleviates time and energy demands, work-family overload and conflict, childcare stress, and financial strain that contribute to lower levels of emotional well-being among American parents, the disparity in mental health between parents and nonparents may be smaller in these countries than in the U.S. In other words, the larger policy context in which Americans parent may be a *fundamental cause* of why they experience more stress and lower levels of emotional well-being than their childless peers.

In this paper, we examine cross-national variation in the disparity in happiness – a global measure of emotional well-being that is included in many international data sets – between parents and nonparents in 22 OECD countries. We also assess whether the availability of work-family reconciliation policies like paid work leaves, paid sick and vacation leaves, work flexibility, and subsidized childcare help explain cross-national variation in the gap in happiness between parents and nonparents. Because societies differ in their level of social inclusion and inequality (Mandel and Semyonov 2005; Wilkinson and Pickett 2011), population health (Wilkinson 2006), and culture (including social norms about the feelings citizens should and

should not feel and express; Hochchild 1975, 1979; Simon and Nath 2004; Veenhoven 2010), we focus on the *relative gap* in happiness between parents and nonparents across these countries. Note that we are not suggesting that parents residing in countries that provide more public resources and social support to families are happier than parents whose countries offer less assistance. Many social factors besides supportive family policies, including those listed above, influence self-reported happiness in each country (Helliwell et al., 2010). We are, however, suggesting that the *disparity* in happiness between parents and nonparents is smaller in countries with more generous policy provision for families than in less generous countries such as the U.S.

DATA

To evaluate the parenthood gap in happiness across country-level policy contexts, we draw upon individual-level representative survey data as well as a variety of country-level policy and economic data sources to run multilevel models of individual happiness nested within countries. Representative data were obtained from the 2006 (Round 3) and 2008 (Round 4) releases of the European Social Survey (ESS) as well as the 2007 and 2008 releases of the International Social Survey Programme (ISSP). The ESS used random-probability sampling to conduct in-person interviews with respondents aged 15 or older in 25 (in 2006) and 31 (in 2008) European countries. Each ESS administration contained core questions on respondents' sociodemographic characteristics and level of happiness.   More information on the ESS design and country-specific idiosyncrasies in data collection procedures can be found on the ESS website (http://ess.nsd.uib.no/ess/). The ISSP, distributed by the GESIS Data Archive for the Social Sciences (http://zacat.gesis.org/), features the same core questions. Although sampling procedures differ somewhat by country, the ISSP generally employs either a simple or multi-stage stratified random sampling procedure that elicits respondents aged 18 or older.

We restricted the analysis sample to respondents over 18. Our analyses of the happiness gap between parents and nonparents do not include persons not residing with children (the ESS does not include a measure of adult children outside the household), which may underestimate the parental status happiness gap (since those who are non-custodial parents or have grown children living outside the household are grouped with nonparents). Most countries have sample sizes greater than 1000 per survey wave. Because the ESS and ISSP samples are nationally representative, all reported analyses are unweighted, though we also estimated weighted models based on country-specific sample weights and found no substantive differences.

Our analyses use a concatenated dataset that includes ESS observations for 19 European countries for which sufficient policy information is available as well as ISSP observations for non-European English-speaking countries (Australia, New Zealand and the U.S.). The 40 resultant country observations for 22 countries are summarized in Table 1. We use multiple observations on the same country but from different closely spaced years where available to increase survey reliability (Andersson, Glass, and Simon 2013) and maximize the number of clusters at the second level. This enables us to include a larger number of country level covariates while preserving statistical power. All individual level variables for respondents nested within countries, including parental status, are obtained from the ESS and ISSP concatenated data and described in the measurement section below.

TABLE 1 ABOUT HERE

At the country level, the primary independent variables are family policy indices, constructed to measure policies regarding (1) paid childbearing leave, (2) paid vacation and sick days, (3) flexibility in hours and work schedule, and (4) childcare assistance. In developing the indices for paid leaves, we consider maternity and parental leaves for childbirth and adoption, sick leave, vacation leave, personal days, and leave for family medical care. For each type of

leave we count the duration of paid leave at any level of payment, with another indicator for the inclusiveness of the eligibility criteria for leave. For flexibility, we consider both the right to temporarily reduce work hours for workers providing care to offspring as well as the ability to choose days and hours of work. For childcare assistance, we measure the extent of public subsidy for the cost of care by calculating the average cost of substitute care for a two-year old child. This proved to be a more accurate indicator than the extent of direct public provision of care, since some countries financially subsidize family care providers at very young ages, while others construct public childcare centers or use a combination of both strategies at different ages. Rates of maternal labor force participation also vary across countries, making the proportion of young children in publicly provided care a confounded indicator as well.

In order to create at least a five-year lag between the measurement of policy regimes and the outcome assessment of happiness, each policy variable was constructed based on the policy particulars in effect in each country in the year 2000. While five years is not an overly long time for policy effects to establish, even parents of older children face continual parental stressors and are likely to be affected by many of the employment protections and assistance programs offered in 2000. Furthermore, while countries continually refine and alter their family policies, most changes in policies in developed societies other than the U.S. have been positive for families rather than negative, as countries react to the growing number of employed parents and declining fertility (Hegewisch 2005; Hegewisch and Gornick 2008). This means that policy effects measured after 2005 based on policies in effect in 2000 are more likely conservative estimates of true effects than overestimates. Detailed description of each policy index is provided below.

MEASUREMENT

Dependent Variable: Self-Reported Happiness

In the ESS, respondents designated their current level of happiness using a 11-point scale

("Taking all things together, how happy would you say you are?" 0=extremely unhappy to 10=extremely happy). In the ISSP, respondents instead used a 4-point scale ("If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole?"; 1=very happy, 2=fairly happy, 3=not very happy, 4=not at all happy; reverse-scored). We converted the 4-point scale to the 11-point format (2.5, 5.0, 7.5 and 10.0, respectively). To normalize the happiness distribution and substantially improve model fit, we utilized a natural log transformation of happiness rather than the original synthetic variable. In order to submit the happiness variable to this transformation, it first had to be reverse-coded so that it possessed a positive rather than negative skew and then added to a value of one so that no cases had a value of zero (for which the natural log is undefined). Policy results did not differ when happiness was not log-transformed. The rank-ordering of country main effects and parenthood effects on happiness from fixed-effects models shifted slightly but substantive patterns remained the same.

Country-Level Independent Variables: Policy Context and Sociodemographic Controls

Policy: Combined Paid Vacation and Sick Leave (Average Number of Weeks). Information on standard number of weeks of vacation and sick leave was pooled from a variety of sources (Gornick 2003; International Labour Organization 2001; International Social Security Association 2002, 2003; Jorgensen 2002; Ray et al. 2009; Rho et al., 2009). Vacation and sick leave are both expressed as number of paid weeks, determined according to official government policies. Because both vacation and sick leave may support the raising of a dependent child, vacation and sick leave are averaged to create a combined measure used in multilevel analyses.

Policy: Paid Maternity and Parental Leaves (Number of Weeks). Weeks of paid maternity and parental leave were found from a variety of sources identifying country-level policy mandates (e.g., Council of Europe Family Policy Database 2009; Kamerman and Kahn 2004; International Labour Organization 2001).[4] Maternity leave as calculated consists of a unique maternity leave

component as well as a standard parental leave component.

Policy: Work Flexibility (% of Establishments). Work flexibility refers to the ability to vary the start or end of work or to accumulate hours to be used freely for time off of work (OECD 2010). To assess the extent of flexibility within a country, flexibility is measured as the percentage of companies or establishments offering some level of work flexibility. Establishments counted towards this percentage employ at least 10 workers; agriculture sector is not included.

Policy: Payment Into Social Insurance. A country-level variable was created from the Council of Europe Family Policy Database to indicate whether citizens pay a payroll tax to qualify for benefits rather than universal provision from general tax revenues (0=no payment, 1=payment into social insurance). This variable was constructed to control for the possibility that high levels of payroll taxation might negate the positive benefits of paid leaves on happiness.

Policy: Presence of Major Leave Eligibility Restrictions. Country-mandated restrictions on leave eligibility were originally obtained from the Council of Europe Family Policy Database (retrieved at http://www.coe.int/t/dg3/familypolicy/database/default_en.asp). Eligibility restrictions were ranked using a four-point ordinal scheme: 1=no restrictions to be eligible for paid leave (leave includes students and self-employed), 2=only paid employees eligible, 3=some minor restrictions (must work a certain number of days or pay into social insurance for a specified period of time) and 4=some major restrictions (length of time employed for eligibility is greater than 4 months). Preliminary analyses showed that major restrictions in particular mattered to mean country happiness, so this variable was recoded as a dichotomous indicator (0=no major restrictions, 1=major restrictions). This indicator controls for the possibility that less than universal coverage might negate the positive benefits of paid leaves.

Policy: Cost of Childcare. Information on the cost of childcare for a two-year-old, expressed as a percentage of average earnings, was available for a subset of European countries (OECD 2004).

Comprehensive Policy Index (CPI). Because work-family reconciliation policies may reduce

parental stress most effectively as a package rather than in isolation, we created a three-item

policy index consisting of combined paid maternity leave, paid vacation and sick leave, and work

flexibility (alpha=.62).[5] To calculate this index, we converted each of the three policy measures

to a percentage score (defined as a country's generosity relative to the highest-scoring country);

these percentage scores were then summed to produce a comprehensive index with a theoretical

range of 0 to 3 (observed range is .15 to 2.67). This index was dichotomized for our final models,

so that countries with a high value for the CPI (at or above the median of 1.52) were assigned a

value of 1, and all others zero. This allowed a reliable slope to be fitted.

Sociodemographic Control: 2006 Gross Domestic Product (GDP). GDP per capita, in thousands

of 2006 U.S. dollars, was obtained from The World Bank database (World Bank 2006). Because

economic development influences policy generosity as well as national levels of happiness, we

include this basic economic measure as a country-level control (e.g., Beckfield 2006).

Sociodemographic Control: 2005 Total Fertility Rate. We include the total fertility rate (TFR) for

2005 to help control for the degree of selection into parenthood in each country. Countries with

low TFR's presumably experience stronger selection into parenthood, which may contribute to

overall parental happiness relative to countries with higher TFR's where parenthood is more

ubiquitous. TFR estimates were available from the OECD Family Database (OECD 2013).

We considered a variety of other country-level demographic controls that might affect

either selection into parenthood or parental happiness: country-specific poverty rate at 50% of

median income, level of income inequality (Gini coefficient), mothers' labor force participation

rate, proportion of single parents, percent foreign-born, and country unemployment rate.

However, none of these variables statistically altered the effect of policy context on the parental

gap in happiness in preliminary models. Because of the limited country sample size in our

multilevel models (28 to 31 country clusters), we dropped these to maximize statistical power.

Individual-Level Independent Variables: Parental Status and Sociodemographic Controls

<u>Has Child.</u> We identify the presence of children in the household (0=no children in household, 1=one or more children in household) either directly as in the ESS (the respondent was asked whether any children were currently living at home) or indirectly as in the ISSP (the respondent was asked to choose from a list of different combinations of children and/or adults; any combination that included children was used to identify a child in the household).[6]

<u>Gender.</u> In both datasets, gender was measured as male or female (0=male, 1=female).

<u>Age.</u> We measure age as number of years, and enter an additional squared term to account for any nonlinear relationship between happiness and age. In the ESS, the respondent's age was calculated based on date of birth. In the ISSP, age was either calculated or based on self-report.

<u>Income.</u> Across both datasets, we employed a ten-category continuous measure of income. This measure reflects either the respondent's subjective (ESS) or objective (ISSP) income relative to other country residents. ESS respondents were asked to report the household's weekly, monthly, or annual income by choosing from a ranked list of 12 (ESS 2006) or 10 (ESS 2008) subjective categories based on the family's income relative to other families' income. To make the 2006 format commensurable with the 2008 format, the lowest and highest income categories were combined to the next-lowest or highest category (respectively). In the ISSP, respondents reported the household or family's monthly or annual income using local currency. To make this format commensurate with the ESS, we recoded income to within-country deciles (1 to 10).[7]

<u>Married or Living With Partner.</u> In both the ESS and ISSP, respondents reported legal marital status and, if not married, whether they resided with their partner. We combined these two indicators to determine partnership status (0=no partner/spouse, 1=living with partner/spouse).

<u>Full-Time Work.</u> Across datasets, we treat employment as a dichotomous variable. In the ESS,

full-time work was demarcated at 35 hours per week (1= more than 35 hours, full-time). In the

ISSP, full-time work was self-reported by the respondent as their labor force status.

<u>Education (Some College or Higher).</u> We model education as the possession of some college or

higher (0=less than some college; 1=some college or higher).[8]

<u>Professional Occupation.</u> Across both datasets, we noted whether the respondent held a

managerial or professional occupation (0=not manager or professional, 1=manager or

professional) based on the Bureau of Labor Statistics ISCO coding system.

Descriptives on all variables are provided in Table 2 and by country in Appendix I.

TABLE 2 ABOUT HERE

Analytic Strategy

We model the effects of public policies on parental status differences in happiness using two

types of multilevel models (Singer 1998). The fixed-effects procedure was used to characterize

country-level differences in overall happiness and the effect of parenthood on happiness, net of

sociodemographic variables. The mixed-effects procedure was used to examine whether

parenthood might have differing effects on happiness dependent upon country-level policy

contexts. All procedures utilized the concatenated ESS/ISSP dataset described earlier.

In the fixed-effects procedure, happiness was first regressed on individual

sociodemographic control variables with a variable intercept for each country (the U.S. was the

reference category). Parental status (Has Child) was then interacted with each country indicator

to reveal country-level differences in the effect of parenthood on happiness relative to the U.S.,

which served as the reference country. Results from these fixed-effects models are presented in

order to rank order both overall happiness across countries and the effects of parenthood across

countries, net of sociodemographic differences within and between countries. The estimated

multilevel models producing these fixed effects are based on the following equations:

(1) $Y_{ij} = \beta_{0j} + \beta_{1j}X_{1ij} + \beta_{2j}Z_{ij} + E_{ij}$ where

Y_{ij} = happiness of individual i in country j
X_{1ij} = parental status (1 if parent)
Z_{ij} = vector of individual attributes (age, gender, education, income decile,
    marital and employment status, etc.)[9]

(2) $\beta_{0j} = \lambda_0 + \lambda_1 X_{1j}$ where

X_{1j} = vector of variables representing each country in the analysis set with U.S as referent

(3) $\beta_{1j} = \alpha_0 + \alpha_1 X_{1j}$ where

X_{1j} = vector of variables representing each country in the analysis set with U.S as referent

This baseline model yields a vector of coefficients λ_1 and α_1 that describe country

differences in baseline well-being and the unadjusted effects of parenthood on well-being.

Equation 3 is our primary equation of interest, since it describes country level variation in the

parenthood gap in well-being. Significance tests on vector α_1 tell us which countries have

significantly smaller or larger parenthood gaps in well-being relative to the United States.

In the mixed-effects procedure, happiness was regressed on policy and economic

variables (country level) and sociodemographic controls (individual level) using a mixed-effects

multilevel estimation procedure (*xtmixed* in Stata; see Rabe-Hesketh and Skrondal 2008). Within

each model, both country sociodemographic controls were supplemented by one country-level

policy variable and by all individual-level controls. Moreover, parenthood was specified as a

random covariate in order to accommodate the country-level variability in parenthood effects as

demonstrated by the fixed-effects analyses. Because likelihood ratio tests consistently favored

the random-coefficient model over a model constraining the effect of parenthood to be equal

across countries, a random-coefficient specification is consistently used (Chi-square $p < .001$).

Each policy was first entered as a main effect covering all individuals; then, a cross-level

interaction model was estimated, in which the policy was interacted with parental status.[10] All reported coefficients were obtained using a procedure that guards against influential country observations. Auxiliary analyses did not reveal any issues with repeated country sampling, similar to previous research (Beckfield 2006; Ruiter and De Graaf 2006).[11] Because policies are expected to have directional effects, significance tests for policy main-effects and policy-parenthood cross-level interactions are one-tailed (Beckfield 2006). All other tests are two-tailed. Countries sometimes had missingness at or above 10% for family income, occupation or labor force status. To address this issue, we estimated our fixed-effects and mixed-effects models with and without imputation. Because estimates were highly similar across models and substantive findings were identical, we opted to report the results from analyses without imputation.

In several cases, policy variables were transformed either to rank-order or categorical variables. These transformations served two key methodological purposes. First, they stabilized policy estimates for a reasonable number of country observations. Second, they formed sensible treatments of policy variables with highly skewed or observably discrete distributions in raw units. Transformations and final descriptive statistics for policy variables are given in Table 3.

TABLE 3 ABOUT HERE

The mixed effects models were estimated from the following modification to equation 3, which sequentially includes each of the policy indicators and the comprehensive policy index as well as country level control variables, to yield

(3a) $\beta_{1j} = \alpha_0 + \alpha_2 X_{2j} + \alpha_3 X_{3j} + U_j$ where

$X_{2j} =$ vector of variables representing the family policy variables (though only one at a time was included given limited statistical power)

$X_{3j} =$ vector of country-level variables representing per capita GDP and the total fertility rate (TFR)

Significance tests on the vector of coefficients α_2 determine whether countries that provide

greater policy assistance to parents have smaller and less negative effects of parenthood on happiness. Comparisons of the relative size of the coefficients for each of the three policy variables help us understand which policies are most important for increasing parental happiness.

With limited degrees of freedom, we had to be judicious in our selection of country level sociodemographic controls for each model and cognizant of the number of significance tests cumulatively performed at the country level. For this reason, we pared down the set of country characteristics (vector X_{3j}) to include only those relevant for understanding the impact of parenthood on happiness. A second limitation stems from the nature of the available survey items, which do not directly measure the primary parental stressors mentioned in the literature.

There are also a number of individual attributes missing that might affect well-being (and could potentially upwardly bias the effects of policy regimes), particularly weekly work hours and union representation. A final caution comes from the inherent difficulty of identifying cross-national differences in policy regimes as the source of country-level differences in observable characteristics. Multilevel models use contextual information in the most efficient manner possible, but are still subject to the problems of causal inference inherent in regression analysis of cross-sectional data. We attempt to minimize these by using measures of policy regimes that are lagged five years from the date of measurement of our outcome measure and by including country-level controls for fertility rate and economic development.

RESULTS

Our first task entailed running fixed effects models estimating the mean happiness of countries after adjusting for each country's particular sociodemographic profile. This model allows each country to have a country-specific intercept but constrains the effects of sociodemographic variables to be constant across countries. This is important because happiness levels may differ across countries only because their populations differ in important respects

(more young adult, single, or poor residents, for example, might lower overall mean happiness).

The coefficients for these country-specific intercepts are the parameter estimates for equation 2

above, and represent the difference between the intercept for the U.S. (the reference group) and

the other 21 countries in our sample. Table 4 displays these coefficients in rank order relative to

the United States. The numbers can be interpreted as the difference in happiness between the

average person in that country and a similar individual in the U.S. on the logged reverse coded

happiness scale, which ranges from 0 to 2.4.

TABLE 4 ABOUT HERE

Column 1 of Table 4 shows that Americans overall are quite happy, ranking 2nd out of the

22 countries in terms of happiness net of sociodemographic differences across countries. Only

New Zealand yields a positive fixed effect of .098, meaning its residents are, ceteris paribus,

happier than U.S. residents. Denmark ranks third after the U.S., with Greece, Portugal, Russia,

and Hungary exhibiting the lowest country levels of happiness net of sociodemographic controls.

These are all countries facing long-term economic challenges following the creation of the

European Union and the collapse of the Soviet Union, so their placement at the bottom of the

happiness ranking is perhaps not surprising. To perform sensitivity checks on the rankings, we

estimate the fixed effects model separately for countries in the 2006 and 2008 administrations of

the European Social Survey (Columns 2 and 3). This helps determine the role of temporal

instability and unreliability in the measurement of happiness across countries. These results

show similar rankings when each administration of the ESS is analyzed separately for those

countries appearing in both years. Overall, the results show that the U.S. looks relatively good in

terms of the general happiness reported by its residents, but as we see in the next section, this is

not the case for the parent-nonparent gap in happiness in the U.S. relative to other countries.

Our next models in Table 5 present the fixed effects results for country specific variation

in the happiness gap between parents and nonparents. We add equation 3 to the preceding fixed effects model to estimate a country-specific interaction with parenthood, which tells us which countries have a larger or smaller effect of parenthood on happiness relative to the U.S. Results are rank ordered by coefficient size relative to the U.S. coefficient ($b_{u.s.}$=-.127, indicating that parents are significantly less happy than nonparents in the U.S.).

TABLE 5 ABOUT HERE

Column 1 in Table 5 shows that *all* the remaining countries have significant positive parenthood interaction coefficients ranging from .204 to .027, meaning that the U.S. has the largest gap in happiness between parents and nonparents while the remaining countries have smaller or nonexistent gaps. The first eight countries listed (Portugal, Hungary, Spain, Norway, Sweden, Finland, France, and Russia) have positive coefficients larger than .127, meaning that parents in these countries are actually happier than nonparents. The remaining 13 countries have positive coefficients smaller than .127, meaning that parents are less happy than nonparents in these countries. But even Ireland, the nation closest to the U.S. in rank order, has a gap that is 20% smaller than the U.S. parental status happiness gap. Among these industrialized nations, parenthood clearly reduces happiness the most in the U.S.

We again perform sensitivity analyses by separating the 2006 and 2008 ESS administrations. Columns 2 and 3 of Table 5 display the results, showing a moderate amount of instability over time in the coefficient sizes for several countries (Russia, France, Germany, Poland, in particular). The rank order of countries also changes slightly from the 2006 to the 2008 administration of the ESS. Nevertheless, the bulk of the countries continue to show positive and significant cross-level interactions with parenthood even when years are disaggregated and statistical power is limited. These results reiterate the fact that the parental

happiness gap is significantly larger in the U.S., and motivate the search for contextual variables that might explain cross-national variation in the impact of parenthood on happiness.

The mixed-effects multilevel models reported in summary form in Table 6 ascertain the sources of variation in the effect of parenthood on happiness across industrialized countries (full multilevel models displaying coefficients for all individual level sociodemographics and country-level controls, as well as policy variables and cross-level interactions can be found in Appendix 2). We first estimated main effects models that report the effect of parenthood (at the individual level) and each policy (at the country level) on happiness for all individuals in the cross-national sample. These are reported in rows 1 and 2 of Table 6. Parenthood has a consistently negative, though not uniformly significant main effect on happiness when averaged across nations. Work-family reconciliation policies seem to have neutral or positive effects on happiness across nations, judging by the positive main effects of vacation/sick leave, workplace flexibility, and paid parenting leaves (although only the workplace flexibility coefficient is statistically significant). In contrast, higher childcare expenditures, payment into social insurance, and major eligibility restrictions on leave policies negatively affect happiness.

The negative effects of benefit eligibility restrictions and payment into social insurance on happiness are reasonable since they affect both parents and nonparents by presumably reducing either income or benefit eligibility. The main effect of childcare expenses on the happiness of all respondents is more curious – these expenses affect only parents of young children so it is not immediately clear why this decreases overall happiness. We suspect that childcare expenses might be associated at a more general level with domestic spending on social welfare, but inclusion of a variable measuring % of GDP on welfare state spending did not alter this coefficient and did not itself have a significant positive association with personal happiness.

In the next panel, we added cross-level interactions of each family policy with individual

level parenthood to find out whether social policies can reduce the negative association between parenthood and happiness. These coefficients represent the adjustment to the negative effect of parenthood on happiness achieved by that policy; larger positive coefficients indicate a greater reduction of the negative impact of parenthood.[12] Paid vacation/sick days had strong ameliorative effects on parental happiness (increasing happiness by .075 from the lowest to highest country rank), but paid maternity and parenting leaves also reduced the negative impact of parenthood on happiness (moving parental happiness up by .039 from the lowest category of benefit to the highest). The negative effects of childcare costs on happiness are significantly exacerbated for parents; this means that nations reducing the cost of care with some form of social provision from the top percentage (24.7% of average earnings) to the bottom percentage (4.5% of average earnings) in our sample increased parental happiness by .081. In contrast to childcare expenses, eligibility restrictions and payment into social insurance are less negative for parents than nonparents, presumably because parents are more likely to be eligible for and use social insurance than nonparents, raising parental happiness by .046 and .037 respectively.

TABLE 6 ABOUT HERE

Work flexibility is the only social policy that does *not* increase happiness more for parents than nonparents; the results show work flexibility is less important for parents' happiness than nonparents, although the interaction effect is small (b=-.004). Thus, both parents and nonparents benefit from living in nations with a larger percentage of establishments offering flexible schedules, but nonparents appear to benefit slightly more. The policies designed to facilitate flexible employment are relatively recent in EU nations and the U.K. and we suspect their full implementation might alter this pattern of results in the future. Currently, flexible work may be disproportionately found in male dominated jobs in these nations, as it is in the U.S., and thus cannot benefit employed mothers and other caregiving adults to the same extent.

Using our comprehensive policy index (CPI), which combines paid vacation/sick leave, paid maternity leave, and work flexibility, we test whether those nations scoring higher on the policy array achieve a smaller parental gap in happiness. As shown in Table 6, the main effect of the CPI on all respondents' happiness is strongly positive; those nations in the top half of the CPI distribution show significantly greater levels of happiness than those in the bottom half (b=.127 at $p < .001$; the largest coefficient of any policy variable). Moreover, the interaction of CPI with parental status makes this effect even stronger (b=.04 at $p < .01$). The interaction is so large that it completely nullifies the negative effect of parenthood on happiness for those countries in the top half of the CPI distribution. Thus, the countries offering the strongest family policies exhibit a net positive effect of parenthood on happiness, while those offering the weakest policies continue to show a parental happiness deficit compared to nonparents.

DISCUSSION

The observation that parents report lower levels of emotional well-being than their childless counterparts in the U.S. contradicts cultural beliefs that parenthood improves adults' health and happiness and is an anomaly in research on the benefits of social roles and relationships for mental health. Despite considerable interest in this topic, little research to date has considered the role of public policies intended to reduce the stress associated with parenthood on ameliorating this happiness gap between parents and nonparents in advanced industrialized nations.

In this paper, we analyzed data on individuals residing in 22 European and English speaking OECD countries for which policy information was available in order to assess cross-national variation in the gap in happiness between parents and nonparents. Drawing on Link and Phelan's argument about social conditions as fundamental causes of health inequalities, we suggested that the parenthood penalty for happiness is smaller in countries that provide more resources and social support to families than in countries that provide less public assistance. The results of our

analyses strongly suggest that the larger policy context of the U.S. is a fundamental cause of why American parents experience lower levels of emotional well-being than their childless peers.

Our analyses revealed that not all developed nations exhibit a negative association between parenthood and happiness, and that substantial variation in the strength of the parenthood penalty for this dimension of emotional well-being exists across the remaining nations. Using multilevel fixed effects models, we found that the U.S. has the largest penalty for parenthood in this group of OECD nations. This finding emphatically does *not* mean that U.S. parents are unhappier than parents living elsewhere in the developed world. On the contrary, recall that irrespective of parental status, U.S. residents reported the highest level of happiness. This may reflect a greater emphasis on being happy in the emotion culture of the U.S. than in the other countries (Kotchemidova 2005) – a topic that warrants further research. But the disparity in happiness between parents and nonparents in the U.S. is large and significant, even after controlling for a host of variables that affect parental happiness. This pattern contrasts with that found in other developed nations particularly in Hungary, Norway, Sweden, Portugal, Finland, France, Spain, and Russia, where parents report higher levels of happiness than nonparents.

We next investigated the sources of variation in the association between parenthood and happiness. Using individual family policies as well as a comprehensive policy index, we found that the policy context of each country influences whether parenthood has a positive, negative, or benign influence on happiness in developed Western nations. The largest impact of public policies on happiness came from our comprehensive policy index, which explained 20% of the variation in the effect of parenthood on happiness across nations. This index measured the strength of the work-family "package" of paid parenting leave, paid sick and vacation leave, and work flexibility. In those countries with the strongest policy packages, the inverse relationship between parenthood and happiness is completely eliminated. Even more interesting, the stronger

a country's comprehensive policy package, the happier their general population appeared to be. The synergistic value of these policies as a package, combined with their large positive effects on happiness for parents *and* nonparents, suggest that a multipronged approach to assisting parents will be necessary for sustained impact on the parental happiness deficit in the U.S.

Among the policies reducing the negative impact of parenthood on happiness, lowering average childcare costs (as a percentage of average earnings) showed the greatest potential to increase parental happiness, though we had information for only a limited subset of countries. This echoes Stanca's comparative research (2012) showing that children negatively affect the well-being of parents primarily through their financial impact. The effects of vacation and sick leaves on parental happiness were almost as strong, but both maternity and parental leave were positively associated with increases in parental happiness as well. The type of policy matters too. Significant eligibility restrictions weakened the impact of policies on the happiness of the general population, but less so for parents who presumably met the eligibility criteria for benefits more often. Payments into social insurance lowered the happiness of the general population but not for parents, who may have received more assistance from social insurance than nonparents.

These results strongly suggest that subsidized childcare and occasional paid time off from work improve parent's well-being and may have the greatest impacts on parental happiness of any policy interventions. Given the association between parental and child emotional well-being (Cummings et al. 2005), these may be strategies to improve child well-being as well. Successful campaigns for paid sick leave in New York and San Francisco, and the passage of paid parenting leave in California, suggest that the U.S. public is supportive of these initiatives in some places. Funding strategies that eliminate or reduce employer's costs of providing childcare and paid leave, as is the case in many European states, might be key to their wider adoption.

We conclude with a discussion of the limitations of our analysis. Data limitations,

particularly the lack of policy information for several countries in the ESS, prevented us from including more European countries in our analyses. However, the countries available for analysis tend to be those included in other comparative studies of European and English speaking nations, and include nations from the different typologies of welfare states, including maternalist, social inclusion, post-socialist, and non-interventionist (Esping-Anderson 1990; Hansen 2011; Mandel and Semyonov 2005; Stanca 2012). Despite this, the possibility that the available countries in our sample may have influenced our results cannot be ruled out, and replications with a broader sample of industrialized countries would help validate the results here.

Moreover, modeling limitations prevented more precise measures of the policy impact on happiness and may have influenced our results. Because of limited sample size at the nation-state level, we were unable to include all policy measures in a single equation to compare the unique association of each with the size of the parenthood effect on happiness. Additionally, we could only identify parents with children still living at home, so our estimates of policy effects on parental happiness are probably underestimated (and our effects on the general population may be overestimated as a result). Furthermore, we could not accurately evaluate the importance of different policies for parents at different life cycle stages (e.g., parents with minor children, with young adult children, and those at the empty nest-stage).

Our results are further tempered by the possibility of differences in the selectivity of parenthood across nations. Where overall fertility is low, as in Italy and Greece, parents may be a more selected group who truly desire children or are happier overall (Kohler 2012). The converse may be true where fertility is higher – being less selective, parenthood may capture more individuals who are not strongly predisposed towards having children or are less happy. We included each nation's total fertility rate in our models to address this, yet find that social policies improve parental happiness despite their role in promoting fertility itself. Selection bias

may have had a stronger impact on the ranking of happiness gaps across nations, underestimating the gap in happiness between parents and non-parents in more selective low fertility countries. Since the U.S. is unique among developed nations in having high fertility, substantial unwanted fertility – and few resources and public supports for parenthood – the happiness gap may appear particularly strong in the U.S. relative to other countries without strong social policies.

Finally, our cross-sectional data do not permit us to make causal inferences about the relationship between parenthood and happiness within countries. We focus on cross-national variation in the *association* between parenthood and happiness, and increase the reliability of our results by including multiple waves of data on the same countries within a short period of time. But we cannot assess causality between policy impacts, the assumption of parenting responsibilities, and subsequent happiness without longitudinal data on the same respondents.

Despite these limitations, our research provides much needed insight into cross-national variation in the disparity in emotional well-being between parents and nonparents as well as the influence of public policies on this disparity. Consistent with the argument we advanced, the gap in happiness between parents and non-parents is smaller in countries that provide more resources and social support to families than in countries that provide less assistance. In addition to identifying a fundamental macro-level social cause of a micro-level emotional process, our research sheds light on the anomalous finding that parenthood (unlike other major adult social roles) decreases rather than increases the subjective well-being of adults in the U.S. Similar to marriage and employment, parenthood provides individuals with personal gratification, a sense of purpose and meaning in life, social connections to others, and an important social identity. At the same time, however, the emotional rewards of having children are overshadowed by the stress associated with parenthood in countries that do not provide public assistance with the financial and opportunity costs of parenting the next generation.

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Table 1. Summary of Country Observations Available for Multilevel Analysis (2006, 2008 ESS with Supplemental ISSP English-Speaking Countries: Australia, New Zealand, United States)

Country	No. of Obs.
Australia	2
Belgium	2
Czech Repub.	1
Denmark	2
Finland	2
France	2
Germany	2
Greece	1
Hungary	1
Ireland	2
Israel	1
Netherlands	2
New Zealand	2
Norway	2
Poland	2
Portugal	2
Russia	2
Spain	2
Sweden	2
Switzerland	2
Great Britain	2
United States	2
Total	40

Note. All multilevel models are estimated initially using this sample. Number of observations/groups per country in final models is determined by listwise availability of policy variables and demographic covariates and also by exclusion of influential policy observations.

Table 2. Overall Descriptive Statistics (2006 and 2008 ESS with Supplemental ISSP English-Speaking Countries)

Variable	M	SD	N	Min	Max
Happiness	7.41	1.92	78972	0	10
Log(Reverse+1)	1.27	0.58	78972	0	2.4

A. Country-Level Policy and Contextual Variables

Variable	M	SD	N	Min	Max
Vacat./Sick Leave	16.01	11.16	21	0	38
Work Flexibility	46.00	14.15	19	10	64
Paid Matern. Leave	14.54	10.97	21	0	42
Paid Parent. Leave	26.90	52.91	21	0	156
Childcare Cost	12.63	8.3	10	4.2	30.3
Comp. Policy Index (CPI)	1.45	0.61	17	0.15	2.67
Pmt into Soc. Ins.	0.57		21	0	1
Major Elig. Restrict.	0.29		21	0	1
GDP 2006	33810.58	16406.98	23	6947	72250
TFR 2009	1.66	0.35	22	1.24	2.84

B. Individual-Level Variables

Variable	M	SD	N	Min	Max
Has Child	0.36		79057	0	1
Female	0.54		79399	0	1
Age	48.15	18.44	79071	14	101
Fam Income (Decile)	5.53	2.73	62888	1	10
Married	0.52		79009	0	1
Lives With Partner	0.08		78744	0	1
Works Full-Time	0.68		67243	0	1
≥ Some College	0.47		78837	0	1
White Collar	0.40		72608	0	1

Note. Vacat./sick leave refers to average weeks of vacation and sick leave within each country. Work flexibility is calculated as proportion of companies (establishment)s within country providing flexi-time (possibility to vary start/end of work and/or accumulate hours for short or long periods of leave). Paid maternity leave refers to base paid parental leave in weeks plus maternity-specific leave component. Major elig. restrict. denotes the presence of major eligibility restrictions for leave policies. Childcare cost is given as percentage of average wage. CPI is based on summation of vacation/sick leave, work flexibility and paid maternity leave after conversion of each element into percentile score relative to highest-scoring country (theoretical range: 0-3).

Table 3. Transformations and Final Descriptive Statistics of Policy Variables for Multilevel Analyses

Policy Variable	Original Units	Transformation	Final Descriptive Statistics			
			M	SD	Min	Max
Comprehensive Policy Index	Continuous (0-3)	'0' Low / '1' High	0.43	0.50	0	1
Vacation/Sick Leave	Weeks	Stdized, RO	13.34	7.16	1	25
Work Flexibility	Weeks	Stdized, RO	12.56	3.98	4	19
Paid Maternity Leave	Weeks	Stdized, Cat	2.05	1.09	1	4
Paid Parental Leave	Weeks	Cat	0.54	0.76	0	2
Pmt into Social Ins	'0' No / '1' Yes	-	0.75	0.43	0	1
Major Elig. Restrictions	Cat (0/1/2/3)	'0' No / '1' Yes	0.25	0.43	0	1
Childcare cost (% of wage)	Percentage	-	11.39	6.75	4.5	24.7

Note. "Stdized" denotes z-score standardization, "RO" denotes rank-ordering of policy by country, "Cat" denotes conversion into a categorical variable. Final descriptive statistics are based on countries included in the final estimation samples for their respective multilevel models (multilevel sample with influential policy observations removed).

Table 4. Fixed-Effects OLS Regression of Logged Reverse-Scored Happiness. Source: ESS (2006, 2008) with 2007, 2008 ISSP Countries (Australia, New Zealand and United States)

COUNTRIES	Combined Happiness	2006 ESS Happiness	2008 ESS Happiness
New Zealand **(1)**	0.0975***	0.102***	0.0966***
	(0.00379)	(0.00387)	(0.00451)
Denmark **(3)**	-0.0195***	-0.0303***	-0.00161
	(0.00397)	(0.00486)	(0.00470)
Australia **(4)**	-0.0705***	-0.0689***	-0.0716***
	(0.00234)	(0.00230)	(0.00262)
Switzerland **(5)**	-0.114***	-0.114***	-0.0992***
	(0.00588)	(0.00817)	(0.00764)
Finland **(6)**	-0.161***	-0.164***	-0.148***
	(0.00597)	(0.00715)	(0.00742)
Ireland **(7)**	-0.181***	-0.169***	-0.180***
	(0.00597)	(0.00775)	(0.00652)
Norway **(8)**	-0.183***	-0.188***	-0.161***
	(0.00703)	(0.00910)	(0.00870)
Sweden **(9)**	-0.204***	-0.179***	-0.218***
	(0.00604)	(0.00687)	(0.00872)
Spain **(10)**	-0.230***	-0.177***	-0.252***
	(0.0104)	(0.0123)	(0.0123)
UK **(11)**	-0.234***	-0.238***	-0.222***
	(0.00507)	(0.00603)	(0.00566)
Netherlands **(12)**	-0.254***	-0.251***	-0.251***
	(0.00470)	(0.00526)	(0.00600)
Belgium **(13)**	-0.273***	-0.250***	-0.288***
	(0.00649)	(0.00677)	(0.0107)
Israel **(14)**	-0.276***		-0.272***
	(0.00696)		(0.00815)
Poland **(15)**	-0.343***	-0.289***	-0.386***
	(0.00854)	(0.0136)	(0.0102)
Germany **(16)**	-0.360***	-0.406***	-0.308***
	(0.00480)	(0.00600)	(0.00493)
France **(17)**	-0.404***	-0.402***	-0.403***
	(0.00393)	(0.00424)	(0.00474)
Czech Rep. **(18)**	-0.422***		-0.414***
	(0.00878)		(0.00845)
Greece **(19)**	-0.485***		-0.479***
	(0.0116)		(0.0146)
Portugal **(20)**	-0.545***	-0.558***	-0.526***
	(0.00869)	(0.0120)	(0.00752)
Russia **(21)**	-0.609***	-0.583***	-0.631***
	(0.00824)	(0.0148)	(0.00827)
Hungary **(22)**	-0.656***		-0.652***
	(0.00795)		(0.00885)

Note. Bolded numbers in parentheses denote rank ordering of happiness (1 = happiest country; USA is 2 and is reference category). Models include sociodemographic controls (sex, age, income, married or living with partner, full-time work, education, occupation). *** $p < .001$ (two-tailed)

Table 5. Parenthood Effects from Fixed-Effects Regression. Source: ESS (2006, 2008) with 2007, 2008 ISSP Countries (Australia, New Zealand and United States)

COUNTRY	Combined Happiness	2006 ESS Happiness	2008 ESS Happiness
Portugal **(1)**	0.204***	0.182***	0.224***
	(0.00463)	(0.00445)	(0.00546)
Hungary **(2)**	0.173***		0.172***
	(0.00607)		(0.00725)
Spain **(3)**	0.158***	0.0942***	0.188***
	(0.0132)	(0.0155)	(0.0138)
Norway **(4)**	0.147***	0.143***	0.142***
	(0.00593)	(0.00642)	(0.00658)
Sweden **(5)**	0.146***	0.157***	0.128***
	(0.00468)	(0.00547)	(0.00486)
Finland **(6)**	0.142***	0.136***	0.138***
	(0.00479)	(0.00497)	(0.00562)
France **(7)**	0.138***	0.153***	0.116***
	(0.00458)	(0.00543)	(0.00526)
Russia **(8)**	0.134***	0.0990***	0.154***
	(0.00508)	(0.00531)	(0.00596)
Belgium **(9)**	0.126***	0.119***	0.122***
	(0.00646)	(0.00632)	(0.00849)
Germany **(10)**	0.121***	0.145***	0.0889***
	(0.00544)	(0.00551)	(0.00704)
Czech. Rep. **(11)**	0.118***		0.118***
	(0.00535)		(0.00673)
Israel **(12)**	0.115***		0.113***
	(0.00977)		(0.0119)
Netherlands **(13)**	0.105***	0.0961***	0.103***
	(0.00540)	(0.00572)	(0.00691)
Denmark **(14)**	0.0994***	0.0804***	0.117***
	(0.00389)	(0.00408)	(0.00438)
Australia **(15)**	0.0863***	0.0865***	0.0851***
	(0.00246)	(0.00279)	(0.00260)
Poland **(16)**	0.0775***	-0.00957	0.145***
	(0.0109)	(0.0129)	(0.0106)
Switzerland **(17)**	0.0572***	0.0720***	0.0285***
	(0.00579)	(0.00633)	(0.00736)
New Zealand **(18)**	0.0454***	0.0437***	0.0467***
	(0.00235)	(0.00279)	(0.00240)
UK **(19)**	0.0437***	0.0641***	0.0176***
	(0.00371)	(0.00424)	(0.00437)
Greece **(20)**	0.0398***		0.0375**
	(0.0136)		(0.0155)
Ireland **(21)**	0.0267***	0.0385***	0.00730
	(0.00719)	(0.00834)	(0.00826)
USA (ref)	-0.127***	-0.121***	-0.123***
	(0.0109)	(0.0108)	(0.0111)

Note. Bolded numbers in parentheses denote rank ordering of parents (1 = happiest parents; USA is ranked last and serves as reference category). Models include sociodemographic controls (sex, age, income, married or living with partner, full-time work, education, occupation). ** $p < .01$, *** $p < .001$ (two-tailed)

Table 6. Policy Results from Multilevel Mixed-Effects Regressions (Source: 2006 and 2008 European Social Survey with ISSP Supplemental English-Speaking Countries.

	COUNTRY-LEVEL POLICY AND CONTEXTUAL VARIABLES							
	Vacation/ Sick Leave	Work Flexibility	Paid Maternity Leave	Paid Parental Leave	Childcare Cost	**Comp Policy Index (CPI)**	Pmt into Soc. Ins.	Major Elig. Res.
Policy Effect	0.00397 (0.00377)	**0.0124**** **(0.00500)**	0.0294 (0.0266)	0.0355 (0.0402)	**-0.00556**** **(0.00246)**	**0.127**** **(0.0404)**	**-0.260**** **(0.0393)**	**-0.0655+** **(0.0414)**
Parenthood Effect	-0.0163 (0.0099)	**-0.0185^** **(0.01002)**	**-0.0206*** **(0.0102)**	-0.0131 (0.00892)	**-0.0194^** **(0.0114)**	-0.0140 (0.00958)	-0.0138 (0.00977)	-0.0142 (0.00913)
CROSS-LEVEL INTERACTION RESULTS								
Policy Effect	0.00348 (0.00375)	**0.0130**** **(0.00502)**	0.0278 (0.0265)	0.0327 (0.0401)	**-0.00502**** **(0.00236)**	**0.121**** **(0.0400)**	**-0.264**** **(0.0394)**	**-0.0724*** **(0.0414)**
Parenthood Effect	**-0.0603**** **(0.0179)**	0.0334 (0.0288)	**-0.0482**** **(0.0199)**	**-0.0230**** **(0.0101)**	0.0231 (0.0165)	**-0.0308**** **(0.0110)**	**-0.0413**** **(0.0184)**	**-0.0261**** **(0.00969)**
Parenthood × Policy	**0.00329**** **(0.00116)**	**-0.00422*** **(0.00221)**	**0.0134+** **(0.00841)**	**0.0190*** **(0.0106)**	**-0.00379**** **(0.00123)**	**0.0402**** **(0.0163)**	**0.0365*** **(0.0209)**	**0.0455**** **(0.0179)**
Observations	40,036	41,230	38,796	39,914	22,986	36,937	40,814	40,284
Number of groups	30	31	29	29	15	28	31	30
Log Likelihood	-31126	-31438	-30158	-30610	-16567	-28734	-31412	-31126

Appendix 1. Descriptive Statistics by Country (2006 and 2008 ESS with ISSP Supplemental Countries)

	Happiness Mean (SD)	Vacation/Sick Leave (Avg. Wks)	Work Flexibility (%)	Paid Maternity/ Parental Leave (Wks)	Childcare Cost (% of wage)	**Composite Policy Index (CPI)**	Pmt into Social Insurance / Major Elig. Restrictions	GDP Per Capita, 2006	TFR, 2009
Australia	8.05	2.5	41	0/0	.	0.67	0/0	36203	1.79
Austria	7.44	10	52	16/0	.	1.71	0/0	39234	1.41
Belgium	7.66	9.3	38	11/13	.	1.05	1/0	37903	1.77
Czech Repub.	6.85	28	54	19/0	8.6	1.92	0/0	13887	1.28
Denmark	8.35	29	51	16/6	8.4	2.02	0/0	50462	1.80
Finland	8.01	24	62	12/26	7.6	2.05	1/0	39487	1.80
France	7.13	24.5	48	16/0	.	1.92	1/1	35558	1.92
Germany	7.10	29.7	51	14/104	9.1	1.76	0/0	35238	1.34
Greece	6.67	38	29	9/0	.	1.39	1/0	23506	1.34
Hungary	6.09	17.6	36	17/156	4.2	1.33	0/0	11174	1.32
Ireland	7.63	6.9	55	13/0	.	1.41	1/0	52220	1.88
Israel	7.54	.	.	./.	.	.	./.	20676	2.84
Netherlands	7.68	20.2	43	16/0	17.5	1.51	1/0	41459	1.71
New Zealand	8.22	2	63	0/0	.	1.07	0/0	26421	1.97
Norway	7.95	28.1	.	42/104	.	.	1/1	72250	1.84
Poland	7.05	.	55	./.	6.8	.	./.	8958	1.24
Portugal	6.43	10.45	23	6/0	.	0.75	1/1	18996	1.41
Russia	5.97	6.4	.	20/156	.	.	0/0	6947	.
Spain	7.63	22.5	43	16/0	30.3	1.75	1/1	27989	1.35
Sweden	7.86	16.9	64	42/0	4.5	2.67	1/1	43949	1.77
Switzerland	8.01	5	.	16/0	.	.	1/0	52276	1.42
U.K.	7.43	5.2	56	5/0	24.7	1.25	1/0	40335	1.79
USA	8.32	0	10	0/0	.	0.15	0/1	44663	2.05

Appendix 1 continued. Descriptive Statistics by Country (2006 and 2008 ESS with ISSP Supplemental Countries)

	Female	Age M(SD)	Income Decile M(SD)	Married	Living with Partner	Working Full-Time	Some College Education or Higher	White Collar
Australia	0.55	50.74 (16.93)	6.10 (3.03)	0.61	0.11	0.44	0.68	0.55
Austria	0.54	44.52 (17.89)	5.48 (1.98)	0.46	.	0.69	0.40	0.36
Belgium	0.52	46.32 (18.68)	6.73 (2.31)	0.52	0.05	0.71	0.45	0.46
Czech Repub.	0.51	47.10 (17.34)	3.43 (1.56)	0.50	0.05	0.91	0.40	0.34
Denmark	0.51	49.51 (17.80)	6.39 (2.51)	0.57	0.12	0.71	0.56	0.48
Finland	0.51	48.33 (18.88)	5.95 (2.46)	0.50	0.15	0.80	0.47	0.40
France	0.54	48.42 (18.25)	5.74 (2.51)	0.48	0.12	0.45	0.47	0.46
Germany	0.49	48.61 (17.77)	5.08 (2.33)	0.54	0.09	0.70	0.56	0.41
Greece	0.55	45.04 (16.75)	5.64 (2.36)	0.58	0.03	0.87	0.31	0.28
Hungary	0.57	49.55 (18.94)	5.23 (2.43)	0.48	0.05	0.92	0.37	0.23
Ireland	0.54	46.96 (18.01)	5.40 (2.60)	0.50	0.07	0.64	0.59	0.38
Israel	0.54	45.42 (19.10)	4.62 (2.66)	0.61	0.03	0.64	0.43	0.43
Netherlands	0.54	49.16 (17.74)	5.96 (2.44)	0.47	0.07	0.57	0.53	0.52
New Zealand	0.55	50.93 (17.51)	5.98 (2.97)	0.64	0.16	0.45	0.56	0.66
Norway	0.49	45.83 (17.99)	7.11 (2.38)	0.49	0.15	0.70	0.57	0.44
Poland	0.53	44.38 (18.76)	4.27 (2.84)	0.56	0.03	0.85	0.37	0.31
Portugal	0.61	51.94 (19.58)	3.95 (2.01)	0.56	0.04	0.76	0.14	0.18
Russia	0.60	46.79 (19.02)	3.16 (2.50)	0.46	0.03	0.87	0.47	0.36
Spain	0.52	46.52 (19.05)	4.93 (2.33)	0.55	0.05	0.81	0.37	0.25
Sweden	0.50	47.40 (18.98)	6.66 (2.24)	0.45	0.20	0.76	0.47	0.44
Switzerland	0.55	49.32 (18.19)	6.43 (2.54)	0.50	0.07	0.68	0.43	0.48
U.K.	0.55	49.45 (18.82)	5.76 (2.79)	0.46	0.07	0.60	0.51	0.37
USA	0.57	48.74 (17.25)	5.75 (2.93)	0.49	0.06	0.51	0.57	0.46

Note. Happiness is aggregated from the ESS or ISSP data. CPI is a calculated as the sum of vacation/sick leave, work flexibility and paid maternity leave after conversion of each element into standardized 0-1 format (theoretical range: 0-3).

Appendix 2. Multilevel Mixed-Effects Regressions of Logged Reverse-Scored Happiness with Parenthood Interactions
Source: 2006 and 2008 European Social Survey with ISSP Supplemental English-Speaking Countries

Level 2: Estimates for Country-Level Policy and Contextual Variables								
Vacation/Sick	0.00348 (0.00375)							
Work Flex		**0.0130**** **(0.00502)**						
Paid Matern			0.0278 (0.0265)					
Paid Parent				0.0327 (0.0401)				
Childcare Cost					**-0.00502**** **(0.00236)**			
Comp Policy (CPI)						**0.121***** **(0.0400)**		
Pmt Soc. Ins.							**-0.264***** **(0.0394)**	
Major Res.								**-0.0724*** **(0.0414)**
GDP	-0.0131 (0.0319)	**0.0591*** **(0.0358)**	-7.13e-05 (0.0380)	0.00253 (0.0398)	0.0248 (0.0340)	0.00191 (0.0363)	**0.0902***** **(0.0202)**	**0.0576**** **(0.0224)**
TFR	**0.234***** **(0.0492)**	0.0653 (0.0410)	**0.164***** **(0.0373)**	**0.204***** **(0.0462)**	**0.126***** **(0.0433)**	**0.236***** **(0.0371)**	0.00397 (0.0302)	**0.180***** **(0.0298)**
Level 1: Estimates for Individual-Level Variables (Includes Child × Policy Cross-Level Interactions)								
Parenthood	**-0.0603***** **(0.0179)**	0.0334 (0.0288)	**-0.0482**** **(0.0199)**	**-0.0230**** **(0.0101)**	0.0231 (0.0165)	**-0.0308***** **(0.0110)**	**-0.0413**** **(0.0184)**	**-0.0261***** **(0.00969)**
Parenthood × Policy	**0.00329**** **(0.00116)**	**-0.00422*** **(0.00221)**	**0.0134+ (0.00841)**	**0.0190*** **(0.0106)**	**-0.00379***** **(0.00123)**	**0.0402**** **(0.0163)**	**0.0365*** **(0.0209)**	**0.0455**** **(0.0179)**
Female	**0.0615***** **(0.00554)**	**0.0578***** **(0.00536)**	**0.0623***** **(0.00566)**	**0.0625***** **(0.00548)**	**0.0662***** **(0.00697)**	**0.0627***** **(0.00577)**	**0.0624***** **(0.00545)**	**0.0657***** **(0.00552)**

Age	-.000680***	-0.00133***	-0.000423**	-.000622***	-0.00131***	-0.000711***	-.000520***	-.000320*
	(0.000181)	(0.000177)	(0.000184)	(0.000181)	(0.000224)	(0.000189)	(0.000178)	(0.000179)
Age Squared	0.000182***	0.000196***	0.000177***	0.000185***	0.000219***	0.000184***	0.000187***	0.000183***
	(9.31e-06)	(9.10e-06)	(9.42e-06)	(9.16e-06)	(1.15e-05)	(9.70e-06)	(9.07e-06)	(9.16e-06)
Family Income	0.0230***	0.0229***	0.0219***	0.0230***	0.0269***	0.0225***	0.0208***	0.0229***
	(0.00128)	(0.00126)	(0.00129)	(0.00127)	(0.00168)	(0.00133)	(0.00125)	(0.00127)
Married	0.210***	0.211***	0.208***	0.210***	0.217***	0.210***	0.207***	0.208***
	(0.00667)	(0.00650)	(0.00675)	(0.00664)	(0.00842)	(0.00694)	(0.00658)	(0.00661)
Lives w/Partner	0.131***	0.128***	0.125***	0.134***	0.140***	0.131***	0.128***	0.133***
	(0.00963)	(0.00947)	(0.00990)	(0.00937)	(0.0119)	(0.0101)	(0.00938)	(0.00951)
Full Time Work	-0.0186***	-0.0158***	-0.0198***	-0.0185***	-0.00261	-0.0180***	-0.0165***	-0.0175***
	(0.00614)	(0.00600)	(0.00614)	(0.00597)	(0.00795)	(0.00643)	(0.00590)	(0.00610)
Some College	0.000149	-0.00284	0.00396	0.00196	0.00505	-0.00143	-8.97e-06	0.00547
	(0.00685)	(0.00667)	(0.00697)	(0.00676)	(0.00855)	(0.00713)	(0.00679)	(0.00677)
College Or More	-0.0126	-0.00929	-0.00814	-0.00699	-0.0149	-0.00911	-0.0149*	-0.00555
	(0.00796)	(0.00781)	(0.00803)	(0.00789)	(0.00987)	(0.00830)	(0.00773)	(0.00790)
Mgr / Prof.	0.0344***	0.0381***	0.0360***	0.0340***	0.0384***	0.0408***	0.0288***	0.0352***
	(0.00756)	(0.00739)	(0.00765)	(0.00745)	(0.00946)	(0.00780)	(0.00734)	(0.00748)
Other Prof.	0.0209***	0.0203***	0.0213***	0.0196**	0.0219**	0.0260***	0.0112	0.0231***
	(0.00789)	(0.00764)	(0.00790)	(0.00765)	(0.00967)	(0.00827)	(0.00763)	(0.00763)
Constant	0.925***	0.792***	0.949***	0.928***	0.992***	0.931***	1.188***	0.977***
	(0.0518)	(0.0656)	(0.0508)	(0.0290)	(0.0356)	(0.0245)	(0.0361)	(0.0233)
Observations	40,036	41,230	38,796	39,914	22,986	36,937	40,814	40,284
Number of groups	30	31	29	29	15	28	31	30
Log Likelihood	-31126	-31438	-30158	-30610	-16567	-28734	-31412	-31126

Note. All models include a random coefficient for parenthood (has child). Number of groups differs across models due to listwise availability of policy variables and exclusion of influential groups from policy estimates. Comprehensive policy model includes only countries with full policy information for vacation/sick leave, work flexibility, and paid maternity leave.

*** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .06$ (one-tailed; policy estimates and cross-level interactions)

*** $p < .001$, ** $p < .01$, * $p < .05$ (two-tailed; all other coefficients)

ENDNOTES

[1] While economists note that the U.S. does provide a substantial amount of monetary support to families, much of this is nested in our tax code's elaborate system of deductions and credits for housing, dependent care, and health care; and much of it is means-tested so unavailable to working and middle class families (Folbre, 2008).

[2] The limitations of the FMLA are well known; the law only guarantees time off without pay and covers only those workers who meet its job tenure and work hour requirements, while exempting small employers completely.

[3] By indirect opportunity costs, we refer to the time and labor parents spend caring for children that prevents both their own human capital formation (education, training, work experience) and time in the labor force earning wages.

[4] Detailed information on maternity and parental leave measure construction is available on request.

[5] Social insurance, major leave restrictions, as well as the provision of universal health care and education were not included in this index because they are dichotomous measures without sufficient variation; the cost of childcare was not considered because this information was only available for a limited number of European countries.

[6] Regardless of which English-speaking country and/or year (2007 or 2008 ISSP) considered, at least 73% of children resided in households with 2 or fewer adults. Among those in households with 3 or more adults, approximately 60% of respondents sampled would be biological parents.

[7] Local currency categories sometimes numbered greater or fewer than 10 categories; in such cases, assignment to deciles produced gaps or irregularities in within-country distributions.

[8] In the ESS, respondents' education was reported using either the number of years or the ISCED educational coding system. Unfortunately, 37.4% (in 2006) and 32.8% (in 2008) of respondents did not harmonize into the coding system. The ISCED system is preferable to years of education as it better captures between-country educational attainment than a measure that relies on years spent within a given country's formal educational system. Values assigned using this system correlated highly with number of years (recoded with 20 as the maximum value), rs = 0.76 – 0.80 among respondents who had both types of information. We therefore exploited the fact that number of years had very low missingness (only about 1% of survey sample) by recoding it into educational categories. Those with 13-20 years of formal education were noted as possessing some college or tertiary education or higher (0=below 13 years, 1=13 or more years). A tabulation of years of education by ISCED category for those with both educational measures available (using the 2006 ESS) showed that 89.7% of respondents with some tertiary education or higher (according to the ISCED system) also reported 13 to 20 years of formal education. Because the ISSP's harmonized ISCED education variable had only about 1% missingness across both years, we used it directly. Those who reported post-secondary education without a university degree or a university degree were coded as possessing some college/tertiary education or higher (0=no post-secondary education, 1=post-secondary education).

[9] Because it is not our primary focus here, we omit estimation of country differences in the main effects of individual characteristics such as age or education on happiness.

[10] Cluster-based mean centering of parenthood or other sociodemographic covariates does not alter any of the presented findings, nor does grand-mean centering of country-level variables (see Enders and Tofighi 2007 for a discussion). Thus all estimated coefficients were obtained using raw variable scores.

[11] Van der Meer and colleagues (2010) recommend looking for influential country observations using standard leverage diagnostic tools (e.g., Cook's d, DFBETAS). In separate policy-specific analyses, mean country happiness for parents was regressed on a given policy measure, controlling for GDP and TFR. Influential country observations were eliminated iteratively until the DFBETAS threshold (2 / sqrt(n)) was not exceeded for the policy estimate (i.e., until the policy slope stabilized). The obtained set of observations was then utilized for the multilevel mixed-effects analyses. This means in practical terms that the number of country observations used in the multilevel models is typically 28 to 31. Additional analyses taking into account autocorrelation due to repeated observations of the same country did not reveal any problems (see also Beckfield 2006). Specifically, we estimated three-level mixed-effects models nesting respondents within

country observations within countries. These models produced the same findings for policy main effects and cross-level interactions, and for these models likelihood ratio tests similarly rejected fixed-coefficient in favor of random-coefficient specifications.

[12] The happiness scale is logged, so the impact of each policy depends on the starting level of parental happiness, with smaller scale effects as initial happiness increases. The logged scale has a mean of 1.35 and SD of .56 to facilitate comparisons effect sizes here.