# Parenthood and life satisfaction: Why don't children make people happy?

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## Abstract

This study explored the association between parenthood and life satisfaction and went beyond existing literature by taking into account the time costs and financial costs of children. The analysis was based on prospective data from the German Socio-Economic Panel (1993–2010, *N* = 13,093). The author applied a fixed effects modeling approach that controlled for unobserved differences between parents and nonparents. The study shows that parenthood by itself has a substantial and enduring positive effect on life satisfaction. These positive effects, however, are suppressed by the financial and time costs of children. Whereas the positive effects of parenthood on fathers' levels of life satisfaction are primarily overshadowed by the financial cost of children, the positive effects for women are offset by both financial and time costs. The results indicate that previous findings of no positive association between children and life satisfaction are due to interrelated costs that interfere with well-being.


Keywords: Parenthood, Life Satisfaction, Happiness

A major reason to have children is that they may provide economic or psychological benefits to their parents (Fawcett, 1988). Because children in developed countries do not contribute appreciably to household income, and because grown children in these countries usually do not provide material support to their elderly parents, the motivation to become a parent seems to be primarily driven by the expected psychological benefits. Almost all empirical studies on the association between parenthood and subjective well-being, however, have ascertained that parents are not happier or are even less happy than childless people. McLanahan and Adams (1987) concluded in their widely cited review that "no [scholar] has found that parents are better off than nonparents on any measure of the conventional measures of well-being" (p. 243). Empirical studies on the association between parenthood and life satisfaction published in the 1990s and 2000s usually confirmed McLanahan and Adams's conclusion. In a recent survey of the literature on this issue, Hansen (2012) notes that "most cross-sectional and longitudinal evidence suggests … that people are better off without having children" (p. 29). This finding seems to be intriguing to many people and has been discussed in popular scientific books (e.g., Gilbert, 2006) as well as in the mass media (e.g., Senior, 2010).

Although the finding that parenthood is not associated with life satisfaction has been widely established, there is scarce evidence to show why parents are not happier than childless people. Two alternative explanations have been put forward for the nonpositive effect of children on life satisfaction. Studies in the field of family research usually point out that raising children involves tremendous costs that outweigh the benefits of having children. This cost-of-children hypothesis (Hansen, 2012) has rarely been tested; however, previous research showed that parenthood is associated with increased marital conflict (Nomaguchi & Milkie, 2003), depression (Evenson & Simon, 2005), decreased marital satisfaction (Keizer, Dykstra, & Poortman, 2010; Twenge, Campell, & Foster, 2003), and decreased satisfaction in one's financial situation (Stanca, 2012). In contrast to the cost-of-children hypothesis, leading theories within happiness research question whether crucial life events have any permanent effect on one's level of life satisfaction. According to the set-point or dynamic equilibrium theory, life satisfaction is highly stable over the life course, and significant life events, such as the birth of a child, only temporarily change an individual's life satisfaction from a set point that is predominantly determined by personality traits.

This article addresses the question of why children do not enhance their parents' level of life satisfaction. A major objective of this study is to scrutinize the hypothesis that children by

themselves have a positive effect on life satisfaction but that these psychological benefits are offset by the various costs of children. My analyses go a step further than previous research by explicitly factoring in the financial and time costs of children and show that, after controlling for these costs, parenthood has a substantial and long-lasting positive effect on happiness.

It must be noted that happiness and life satisfaction are related but different aspects of subjective well-being. Whereas life satisfaction refers to the cognitive component of subjective well-being and can be defined as an individual's personal assessment of well-being based on one's own chosen criteria, happiness refers to the experience of positive and negative affect (Diener, 1984). Nevertheless, many scholars argue that both concepts are quite similar (see Hansen, 2012). Therefore, in the present study the terms *happiness* and *life satisfaction* are used synonymously.

## BACKGROUND

Why aren't parents happier than childless people? Scholars in the field of family research such as Bird (1997), Nomaguchi and Milkie (2003), McLanahan and Adams (1987), Twenge, Campell, and Foster (2003), and Vanassche, Swicegood, and Matthijs (in press) have argued that children entail both rewards and costs which neutralize each other. On the one hand, children may satisfy a number of their parents' psychological needs (Fawcett, 1988; Hoffman & Hoffman, 1973; Nauck, 2007). For instance, children provide psychological stimulation as well as pleasure, fun, and excitement. Children also can create relations with other parents or intensify existing relations and thus contribute to the social integration of parents. Furthermore, children can serve as a status symbol and enhance the social identity of their parents. Such benefits from children as affection, stimulation, and status attainment do not significantly depend on the number of children. One or two children may provide as much psychological benefits as three or more children. Thus, the transition from childlessness to one child is expected to generate greater rewards than the transition from one child to two children. Economically speaking, the marginal utility diminishes with each additional child. On the other hand, in addition to the fun and joy children can provide, child rearing also entails heavy costs. Fawcett (1988) distinguished between three major types of costs: time costs, psychological costs, and financial costs.

Time costs: Children demand a great amount of time and attention. Having children in the household usually involves caregiving and increases the time spent on household chores such as

shopping, cleaning, cooking, and the laundry. This increased workload holds true in particular for women: in most countries, women still bear primary responsibility for housework, whereas the time spent by men on household chores is hardly affected by parenthood (Baxter, Hewitt, & Haynes, 2008; Knudsen & Wærness, 2008; Nomaguchi & Milkie, 2003). Furthermore, women are the primary caregivers, a task that is rated along with housework, commuting, and working as the least satisfaction-enhancing activities (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). Increased demands on time for household chores and child care following childbirth not only reduces leisure time but also leaves the couple with less spousal time, which may be detrimental to marital satisfaction (Claxton & Perry-Jenkins, 2008; Dew & Wilcox, 2011).

Psychological costs: Parenting not only absorbs time, but also may generate stress and strain. It is found that parents exhibit a higher prevalence of depression (Evenson & Simon, 2005) and anger (Ross & Van Willigen, 1996) than childless people do. Parents also more frequently report difficulties in reconciling work and life (Gallie & Russel, 2008; Winslow, 2005) and more often report higher levels of pressure from time constraints than childless couples do (Mattingly & Sayer, 2006).

Financial costs: Raising children is expensive and can place significant stress on family finances, which may lead to a decrease in life satisfaction. The financial costs of children comprise direct costs such as additional expenses for nourishment, clothing, and education, as well as opportunity costs such as the unearned wages of parents who leave the labor force or who reduce their working hours. Because fathers are still considered to be primarily responsible for the financial well-being of their families, financial stress from having children may affect the life satisfaction of men more than of women.

As discussed, the costs of parenthood can vary between fathers and mothers. Because parents often turn to a traditional division of household labor, household chores and caregiving are primarily borne by mothers, whereas the economic well-being of the family largely rests with fathers. It is therefore reasonable to hypothesize that the time costs of parenthood contribute disproportionally to the overall costs of parenthood for women, whereas the financial costs of parenthood are more relevant to men. Furthermore, it can be argued that the costs of children vary by the parental employment arrangement. The psychological costs of children are incurred to a greater extent by dual-earner couples than by male-breadwinner couples. This tendency may hold true in particular for working mothers. Because of their disproportionate responsibility for housework and child care, mothers in the labor force often become overburdened by paid

employment together with the demands of caregiving and are particularly vulnerable to time pressures (Mattingly & Sayer, 2006; Michelson, 1990). But fathers in a dual-earner partnership may as well feel greater responsibility for child rearing and experience higher levels of stress than do sole-breadwinner fathers who often do not take up household and child-care duties (Mattingly & Sayer, 2006). Because role specialization may provide the father with additional leisure time, it is arguable that fathers are happier when the mother takes on the role of homemaker. Therefore, dual-earner couples should experience lower levels of life satisfaction after the birth of a child than do male-breadwinner couples or "one-and-a-half-earner couples" (i.e., couples in which one partner works full time and the other part time).

An alternative explanation for the lack of a positive effect of parenthood on life satisfaction comes from the field of happiness research. According to the prevailing theory of happiness—the set-point or dynamic equilibrium theory (Headey & Wearing, 1989; Lykken & Tellegen, 1996)—life satisfaction is primarily determined by personality traits and other genetic factors and remains stable over time around an individual baseline or set point. According to this hypothesis, people respond to major life events such as the birth of a child with a temporary increase in overall happiness, but eventually return to their baseline level of satisfaction. Adaptation to the baseline level is thought to be absolute and to take place within a short period of time.

Longitudinal studies addressing the effect of parenthood on subjective well-being indeed found a positive but short-term effect of childbirth on life satisfaction. Clark, Diener, Georgellis, and Lucas (2008) investigated the effect of children on life satisfaction by using longitudinal data in Germany. This study showed an increase in happiness of men and women in the year before the arrival of a baby and, for women, a significantly elevated level of happiness in the baby's year of birth. Yet when the child is 2 to 5 years old, the level of life satisfaction of both men and women is significantly below their prebirth happiness levels. A similar pattern was found by Clark and Georgellis (2012) for Great Britain and by Frijters, Johnston, and Shields (2011) for Australia. Their results showed that happiness increases around the arrival of a baby but drops below prebirth levels when the child reaches the age of 2. Myrskylä and Margolis's (2012) study for Germany and Great Britain used the same data as Clark et al. (2008) and Clark and Georgellis (2012) and reached similar conclusions.

The cost-of-children hypothesis and the set-point theory make different predictions concerning the effect of parenthood on life satisfaction. According to the cost-of-children hypothesis, children have strong and enduring effects on their parents' level of life satisfaction

once the costs of children are taken into account. In contrast, the set-point theory postulates that in the long run parenthood has no effect on life satisfaction. Because individuals adapt to both the positive and the negative consequences of life events, life satisfaction should increase around childbirth and then deteriorate soon after *even when controlling* for the costs of children.

Finally, a methodological explanation can be given for the finding that fathers and mothers are not happier than childless people. Almost all studies on parenthood and life satisfaction published before 2000 utilized cross-sectional data and, as such, compared the level of happiness of parents and nonparents at a single point in time. One obvious shortcoming of such studies is that they do not permit conclusions about the causal effect of parenthood on happiness. The validity of cross-sectional analysis is severely limited, as it does not take into account possible selection processes. If people who are intrinsically happier have higher chances of marrying and becoming a parent than unhappy people do, then the effect of parenthood on happiness would be biased upwards. But opposite selection processes are also conceivable. Couples without children who experience high levels of happiness may not want to change their lifestyle and may opt to stay childless (see Parr, 2010). If this case were true, then parents are not less happy than nonparents because they have children; rather, happier people are more likely to stay childless.

Most longitudinal studies also have serious flaws which can obscure the happiness-enhancing effects of parenthood. Apart from the study conducted by Myrskylä and Margolis (2012), all longitudinal studies mentioned above did not explicitly focus on the effect of children on life satisfaction, but instead examined the effect of various life events on happiness. To do so, these studies lumped together single, cohabiting, married, separated, and widowed adults, thereby disregarding that the life satisfaction of parents is contingent on their marital status (e.g., Frey & Stutzer, 2000; Stanca, 2012). For instance, single people who become parents very likely experience smaller increases in happiness, or even a reduction in happiness, than couples do. Also, widowed and divorced parents probably exhibit lower levels of life satisfaction than coupled parents. Thus, the negative or null effect of children on life satisfaction established in most longitudinal studies might stem from the moderating effects of partnership status on parenthood–happiness associations.

# METHOD

## *Data*

This study employed data from the German Socio-Economic Panel (GSOEP), a nationally representative longitudinal sample that has been conducted annually since 1984 (Wagner, Frick, & Schupp, 2007). The GSOEP is one of the few nationally representative longitudinal data sets that simultaneously measures the life satisfaction, transition to parenthood, employment situation, and time use of respondents and therefore is very well suited to addressing the questions raised in this study. Because information necessary for the analysis was collected only from 1994 onward, data were used from the waves 1994–2010. For this time period, the GSOEP contains data from 43,979 respondents.

In order to eliminate the moderating effects of partnership status on parenthood–life satisfaction associations and to identify the effect of parenthood on life satisfaction in stable partnerships, the analysis is restricted to cohabiting or married women and men without adult children. Thus, I excluded 24,629 persons (56.0% of all respondents interviewed between 1994 and 2010) who were not living with a partner or whose oldest child was 18 years or older. Of the remaining 19,350 individuals, the 843 repartnered respondents (1.9%) who had experienced a divorce or widowhood were deleted. Further, the sample was restricted to working-age adults and excluded 1,632 respondents (3.7%) who were younger than 18 years, older than 60 years, or enrolled in full-time education. Of the remaining 16,875 men and women, 1,238 respondents (2.6%) whose partner did not participate in the survey were deleted. Finally, 2,544 individuals with missing data (5.8%) were deleted, leaving 6,649 women and 6,444 men in the sample. The remaining individuals provided a total of 64,787 person-years. Both men and women were observed for 4.5 years on average. Within the observation period, 881 women (13.3%) and 875 men (13.6%) became first-time parents. In the year of the first interview, 3,429 women (51.6%) and 3,443 men (53.4%) were already parents, and 2,339 women (35.2%) as well as 2,126 men (33.0%) remained childless during the observation period.

I estimated fixed effects regression models, which have two principal advantages over cross-sectional ordinary least square regression models. First, regressing the changes in life satisfaction on changes in parental status eliminates unobserved time-invariant heterogeneity (e.g., personality traits) that might determine both life satisfaction and the propensity to become a parent. Second, modeling the changes instead of levels reduces bias due to persistent reporting

error, for example, the tendency to overreport life satisfaction. Fixed effects do not control for unobserved factors that vary over time. Nevertheless, in various models I controlled for several time-varying factors that may affect life satisfaction, such as age, health status, time use, labor force participation, and household income.

*Measures*

Dependent variable: The life satisfaction variable in the GSOEP is a global item that asks participants how happy they are with their life ("How satisfied are you with your life, all things considered?"). The response-set ranges from 0 (completely dissatisfied) to 10 (completely satisfied). The reliability and validity of happiness measures have been the subject of several studies. Generally, it is found that single-item measures of life satisfaction show a satisfactory level of reliability (Diener, Inglehart, & Tay, in press). A recent study by Lucas and Donnellan (2012) on the reliability of the happiness measure in the GSOEP using longitudinal data has shown a reliability of .74 when taking into account occasion-specific changes in happiness over time. The validity of single-item measures of happiness has been explored by Abdel-Khalek (2006), who found that a 10-point single-item scale of happiness satisfactorily correlates with established multiple-item scales such as the Oxford Happiness Inventory ($r$ =.63) and the Satisfaction with Life Scale ($r$ = .58), denoting a good concurrent validity of the single-item measure.

Key covariates: The main explanatory factor was the parental status. To estimate the effect of parenthood on life satisfaction, two different specifications were used. First, the parental status was indicated by the number of children under the age of 18 years (one child, two children, three children or more). The reference group consisted of men and women in partnerships without children. In a second model specification, the parental stages are taken into account, where, in accordance with Nomaguchi (2012), the age of the oldest child is used as a benchmark. Nomaguchi's argument is that first-born children have the greatest effect on their parents' lives, whereas a later-born child is less novel and has less impact on parents' well-being. The parental stages were indicated by a categorical variable depicting five crucial phases of the early family cycle: women pregnant with their first child; parents of an infant or prenursery toddler (oldest child 0–1 year old); parents of a nursery-age child (oldest child 2–5 years old); parents of a preteen schoolchild (oldest child 6–12 years old); and parents of a teenage schoolchild (oldest child 13–17 years old). The reference group consisted of childless men and women in a

partnership in which the woman is not pregnant. Both variables indicating parenthood status were created from monthly birth histories of the female respondents. The advantage of using birth history information is that it allows for differentiation between childless families and empty-nest families, a problem that arises when only information on children living within the household is available.

The financial costs of children consist of costs for the upbringing of children and the cost of foregone income through transitions to part-time employment or nonemployment due to child-care obligations. Because of these direct and indirect costs of children, parents usually have less income available for themselves after the birth of a child. A reduction in the individual's available income due to increased household size or reduced household income can be captured by the equivalent household income. The equivalent household income is calculated by adjusting the total net household income according to the number and ages of household members. To do so, an equivalent scale which converts the incomes of heterogeneous households in comparable measures of economic welfare is needed. In the present study, the modified OECD equivalent scale was used, which gives the first adult a weight of 1.0, additional adults (of at least 15 years of age) a weight of 0.5, and children (under 15 years of age) a weight of 0.3.

The time costs of children were captured by changes in time use. Of particular interest are changes in time devoted to family work and leisure. Such information was collected through the question "How many hours do you spend on the following activities on a typical weekday?" Among the activities named were "housework (washing, cooking, cleaning)," "errands (shopping etc.)," "repairs in and around the house," "child care," and "hobbies and other leisure-time activities." Some of these variables had implausible values (e.g., 24 hours spent on leisure-time activities per day). Therefore, all time-use variables were top-coded at 12 hours. On the basis of the three variables that measured time spent on housework, errands, and repairs, an additive index ("household chores") was created which indicated the total amount of hours spent on household and family chores.

The data do not include any direct measures for the psychological costs of children. Therefore, I indirectly assessed the impact of psychological costs from, for example, a work–life imbalance on parental life satisfaction by comparing the life satisfaction of male-breadwinner couples, one-and-a-half-earner couples, and dual-earner couples. The underlying assumption is that, all else being equal, dual-earner parents face greater psychological costs from parenthood on account of greater work–life imbalances and consequently report lower levels of life satisfaction.

To capture the respondents' labor force participation, I differentiated between full-time employed people (35 hours per week or more), part-time employed people (up to 35 hours per week), and people not gainfully employed. Among the latter, I further distinguished between economically inactive people (e.g., stay-at-home parents) and unemployed people, as unemployment was found to have a substantial negative effect on happiness (Lucas, Clark, Georgellis, & Diener, 2004).

Control variables: Previous research has shown that life satisfaction is affected significantly by age and health status (Dolan, Peasgood, & White, 2008). Because age and health status also causally affect the probability to become a parent, both variables were included as controls in each model. Several studies suggested a U-shaped association between age and life satisfaction from the late teens to the early seventies (Baird, Lucas, & Donnellan, 2010; Blanchflower & Oswald, 2008); hence, age was captured in linear and squared form. Health status was assessed by the following question: "How would you describe your current health?" The following answers were available: very good, good, satisfactory, poor, and bad. Finally, in each model, indicators of the survey year were included.

There is mixed evidence on whether life satisfaction increases when cohabiting women and men marry. Whereas Soons, Liefbroer, and Kalmijn (2009) found that in the Netherlands marriage has additional happiness-enhancing effects for cohabiting couples, a study by Musick and Bumpass (2012) suggests that in the United States the transition from a cohabiting union to marriage does not affect life satisfaction. Preliminary analysis conducted with the GSOEP showed that the transition from cohabitation to marriage did not increase life satisfaction in a statistically significant way for either men or women. Moreover, many couples in Germany transition from cohabitation to marriage when they intend to start a family or often even after the birth of their first child. In fact, 36% of mothers in western Germany and 74% of mothers in eastern Germany who gave birth to their first child in 2009 were not married (Goldstein, Kreyenfeld, Huinink, Konietzka, & Trappe, 2010). If marriage is a precursor or result of having children, then including marriage in the model would control away part of the effect I am interested in estimating. Therefore, a control variable for marriage was not included in the multivariate tests.

Table 1 provides descriptive statistics for life satisfaction and the explanatory variables. The columns "Father" and "Mother" refer to actual or expectant parents. Consequently, the columns "Nonfathers" and "Nonmothers" refer to all men and women who were childless in a given year of observation. Over the entire observation period, mothers reported the same level of life

satisfaction as nonmothers, and fathers appeared to be slightly less happy than nonfathers. Parents and nonparents, though, did show discrepancies regarding their time use and financial situations. Mothers reported 3.5 hours of household chores per day, about 90 minutes more than nonmothers. Furthermore, mothers spent 35 minutes less than nonmothers per day on leisure activities. Obvious discrepancies between mothers and nonmothers also emerged with respect to labor force participation. Motherhood was associated with a sharp reduction in working hours. Whereas the majority of nonmothers worked full time, only 18% of mothers held a full-time job and 74% worked part time or were homemakers. In contrast to women, the time use of men varied only slightly with their parental status. Unlike mothers, fathers spent even less time on household chores than did childless men. Nevertheless, fathers' leisure time per day was 35 minutes shorter than that of nonfathers. Additional descriptive analysis revealed that mothers'—but not fathers'—time use on household chores and child care increases with the number of children (results not reported). Whereas mothers with one child spent 4.6 hours per day on household chores and 5.5 hours on child care, mothers of three children devoted 6.3 hours on household chores and 6.5 hours on caregiving.

With respect to their financial situation, fathers and mothers reported a significantly lower equivalent household income than did childless men and women. Whereas men and women without children reported on average an equivalent household income of more than €1,850 per month (approx. $2,420), the mean equivalent household income of parents amounts to roughly €1,350 (approx. $1,770). Additional analysis taking the number of children into account showed that the financial costs of parenthood are greatest for the first child and diminish with each additional child (results not reported). Whereas new parents face a drop in their equivalent household income of about 25%, parents with a second and third child experience additional income losses of merely 7% and 13%, respectively.

## RESULTS

### *Number of children and life satisfaction*

Table 2 reports the effect of the number of children on life satisfaction. I developed estimates for four models, beginning with the number of children as the only key covariate, then successively adding variables for employment status, time use outside paid work, and equivalent household income. The goal was to assess to what extent a potential parenthood–happiness relationship is

suppressed by the various costs of children. Model 1 basically replicated the finding of Stutzer and Frey (2006) using the same data set. In Model 1, no coefficient for number of children reached statistical significance, indicating either that children have no net effect on life satisfaction or that the time and financial costs of children outweigh the joy they bring. Model 2 included indicators of employment status. As can be seen, the level of life satisfaction—especially for men—was highly contingent on employment status. Nevertheless, the effects of the number of children on life satisfaction remained insignificant, indicating that the impact of parenthood on life satisfaction is not moderated by the employment status. Model 3 further took into account time use outside paid employment. Whereas the coefficients for time devoted to domestic work and child care were not statistically significant at conventional levels, time spent on leisure activities does significantly affect the happiness of women ($p < .01$) and men ($p < .1$). Moreover, when controlling for time use, women's coefficients for number of children increased in size, and the coefficients for having one child or two children were significant at $p < .05$. Obviously, for mothers the positive effects of children on life satisfaction are to a certain extent offset by decreased leisure time.

Model 4 tests the hypothesis that the positive effects of children on life satisfaction are offset by the financial costs of parenthood. After inclusion of the equivalent household income in the model, all coefficients for number of children increased substantially in size and became statistically significant at $p < .05$ or $p < .01$. Men in particular exhibit a substantial increase in the effect of children on life satisfaction after controlling for the financial costs of children, confirming the hypothesis that the positive effect of parenthood on the life satisfaction of fathers are primarily thwarted by increased financial burdens. In contrast, the positive effect of children on the happiness of mothers seems to be curbed by decreased leisure time as well as increased financial burdens due to children. The results confirm in part the hypothesis that later-born children generate smaller increases in life satisfaction than does the first child. Whereas the first child boosts a mother's life satisfaction score by 0.165, a second and a third child lead to an additional increase in happiness of only 0.058 ( = 0.223-0.165) and 0.032 ( = 0.255-0.223), respectively. In contrast, for men an almost linear effect of the number of children on life satisfaction emerged.

To summarize, children are positively related to life satisfaction once the financial and time costs of parenthood are taken into account. The size of the effect of children on overall life satisfaction appears to be small, as indicated by a net difference between parents and nonparents

of less than 0.3 on a scale from 1 to 10. Nevertheless, the effect of having two children is similar to the effect of being married. According to Clark et al. (2008), who used the same database, the effect of being married rather than single amounts to 0.2 points.

*Parental employment arrangement and life satisfaction*

In the next model, I tested whether the effect of parenthood on life satisfaction varies with the couples' employment arrangements. To do so, I restricted the analysis to male-breadwinner couples (the man works full time, the woman is not gainfully employed in the labor force), one-and-a-half-earner couples (the man works full time, the woman works part time), and full-time dual-earner couples (both partners work full time), and generated interaction variables indicating the number of children and the employment arrangement. The reference group consisted of childless dual-earner couples working full time, which is the prevailing employment arrangement for couples without children in Germany.

Model 5 in Table 3 did not account for differences in time use outside paid work or household income adjusted for family size. The insignificant coefficients for all variables depicting family size within employment arrangements indicated that neither dual-earner parents, one-and-a-half-earner parents, nor male-breadwinner parents are significantly happier than childless couples in which both partners work full time. On first sight, these findings contradict previous research showing that parents experience less stress and strain when the mother stays at home. It is arguable, however, that the lower psychological costs of parenthood for male-breadwinner parents are bought by the higher financial costs incurred when one partner leaves the labor force. According to this argument, there is a trade-off between the higher financial costs of male-breadwinner couples and the higher psychological costs of dual-earner couples.

Model 6 included the variables capturing time use outside employment and equivalent household income. By holding constant financial and time costs, male-breadwinner and dual-earner parents differ primarily with regard to the psychological costs of parenthood. As expected, taking financial and time costs into consideration, a positive effect of parenthood on life satisfaction emerged for male-breadwinner couples, but not for dual-earner couples. This finding hints at a marked difference in psychological costs between these two groups and suggests that different employment arrangements result in different types of costs from parenthood. Parents who manage to lower stress and strain by reducing their working hours in turn experience higher

financial costs through parenthood. In contrast, parents who manage to avoid the financial costs of parenthood in turn experience high psychological costs.

The results further suggest that fathers and mothers in one-and-a-half-earner couples are affected differently by the psychological costs of children. All three coefficients for mothers working part time were statistically significant, indicating that part-time employment for mothers entails greater psychological benefits than psychological costs when compared with full-time employment. In contrast, men whose partner worked part time did not exhibit higher levels of life satisfaction as compared to men with a partner in full-time employment. Hence, women's part-time employment brings a small measure of psychological benefits for women, but high psychological costs for men, for instance in terms of a work–life conflict due to increased participation in household labor and child care.

*Age of children and life satisfaction*

I shall now turn to the issue of whether life satisfaction changes over the process of childbearing and child rearing. Previous research indicated that life satisfaction increases during the time around childbirth but decreases thereafter to the levels found before childbirth, confirming the hypothesis of set-point theory that crucial life events affect levels of life satisfaction only temporarily (Clark et al., 2008; Myrskylä & Margolis, 2012). The question I addressed was whether adaptation of life satisfaction to preparenthood levels also occurs when financial and time costs are taken into account.

Table 4 shows the results of regression analyses that are similar to those depicted in Table 2, but where the dummy variables for the number of children were substituted by dummy variables indicating the parental stages. The estimates of Model 7 confirmed previous research by showing that—without taking financial and time costs of children into account—parenthood only temporarily increases life satisfaction. Both men and women reported elevated levels of happiness during pregnancy and in the first two years after family formation. When the first-born child reached the age of 2 years, life satisfaction decreased and did not differ statistically from preparenthood levels. The question addressed in the next model is whether a drop in life satisfaction to preparenthood levels also occurs when financial and time costs are taken into account. The coefficients depicted in Model 8 showed that, after controlling for these variables, the life satisfaction of parents increased permanently in a statistically significant way.

Notably, taking financial and time costs into consideration, teenage children seem to make their parents as happy as infants and toddlers less than 2 years old. For the years in between, however, the level of life satisfaction of parents, particularly of women, seems to decrease. Both mothers and fathers whose oldest child was between 2 and 5 years of age were significantly happier than when they were childless, but also significantly less happy than when their oldest child was under the age of 2 years (for men and women: $p < .01$). This bump in life satisfaction might be due to the fact that parents of preschool children experience significantly higher levels of work–life imbalance compared to parents of schoolchildren (Nomaguchi, 2009; Scharlach, 2001).

## DISCUSSION

Previous research on the association between parenthood and subjective well-being usually concluded that children have no impact or even a negative effect on their parents' level of life satisfaction (see Hansen, 2012). Two alternative explanations have been put forward for this finding. According to set-point or equilibrium theory, happiness mainly depends on genetic factors, such as personality traits, and therefore long-term adult happiness is stable. Major life events such as the birth of a child can change happiness levels only temporarily; individuals revert to their previous level of life satisfaction within a short period of time. This explanation has been supported by recent longitudinal studies showing that parents' levels of life satisfaction increased significantly around the time of childbirth but thereafter quickly fell to prebirth levels. The second explanation, which has been forwarded by scholars in the field of family research, maintains that parenthood by itself has an enduring positive effect on life satisfaction, but that this effect is suppressed by different costs incurred when bringing up children. Although this hypothesis is frequently mentioned by family research scholars, there is little empirical evidence to support it. A major objective of the present study was to scrutinize the cost-of-children hypothesis more closely.

The primary finding of this study is that, when taking into account the costs of children, parenthood substantially and permanently boosts life satisfaction, confirming the cost-of-children hypothesis, and contradicting set-point theory's claim that life events only temporarily affect subjective well-being. A prominent topic in happiness literature in recent years has been whether people fully return to their baseline level of happiness after major life events such as marriage,

childbirth, unemployment, and divorce. The present study supports recent criticism of set-point theory, arguing that after certain life events, such as unemployment, adaptation to a fixed baseline level of happiness does not occur (see, Headey, 2010).

Another major finding is that the costs of children affect the life satisfaction of women and men differently. Whereas the benefits from parenthood for men were mainly offset by financial costs, the positive effects for mothers were overshadowed by financial as well as time costs. Because parenthood still affects women's private and working life much more than men's, changes in time use suppressed mothers' (but not fathers') levels of happiness. The finding that the positive effects of children on men's levels of life satisfaction were predominantly offset by the financial costs of parenthood confirms the idea that the financial costs of children—particularly when the mother leaves the labor force—put great pressure on men to earn a decent family wage. Even though the transition to parenthood has detrimental effects on the career opportunities of women only, and even positively affects the wages of men (Choi, Joesch, & Lundberg, 2008; Hodges & Budig, 2010; Percheski & Wildeman, 2008), the overall financial costs of parenthood are more crucial to the fathers' than to the mothers' happiness. My finding on the negative impact of the financial costs of children on men's happiness supports Liefbroer's (2005) conclusion that the perceived financial costs of parenthood have strong effects on men's entry into parenthood. Obviously, both men's willingness to start a family and their subsequent life satisfaction are strongly affected by the financial aspects of parenthood.

Surprisingly, although male-breadwinner couples experience less stress and strain than dual-earner couples (Mattingly & Sayer, 2006), they do not report higher levels of life satisfaction in comparison with full-time dual-earner couples. My results suggest that less time pressure for male-breadwinner parents does not translate into higher levels of life satisfaction because these couples experience higher financial costs from parenthood. Apparently, different employment arrangements entail different types of costs of parenthood. When both parents work full time, they experience higher levels of stress and work–family conflict, which may negatively affect their levels of life satisfaction. In contrast, when the mother in the partnership reduces her working hours or becomes a homemaker, the couple experiences less work–family conflict, but higher financial costs from parenthood. Altogether, my findings alleviate the conclusion of Buehler and O'Brien (2011) that part-time employment is more beneficial for mothers than full-time work.

The results presented here give insight into the still unresolved puzzle of why most people are not happier after becoming a parent. Despite its merits, this study has some limitations. First, the data used for this research provided no information on the psychological costs of children. I countered this limitation by building on previous findings that dual-earner parents experience higher levels of stress and strain and by comparing the levels of life satisfaction between these two groups. Nevertheless, a thorough investigation of the impact of psychological costs on life satisfaction would be highly desirable in future research. Second, the change over time in the costs of rearing children as they grow older has not been sufficiently taken into account. For instance, my analysis was implicitly based on the assumption that equal financial costs are incurred for all children under the age of 16. Moreover, qualitative changes in time costs as children grow older have been disregarded. For example, taking care of a baby—which usually involves continual, time-consuming personal care activities, such as feeding, diaper changing, and cleaning up after the child—can be very exhausting and often interferes with paid work. In contrast, caregiving for a schoolchild also includes joyful play and companionship activities, which often take place outside working hours. Finally, the study was also limited by its exclusive focus on partnered parents. Consequently, the results do not give insight into the happiness of single, divorced, or widowed parents. Thus, future research should explore interactions with marital status in a longitudinal perspective, and in particular examine how raising children outside a partnership affects happiness (e.g., Hansen, 2012).

Despite these limitations, by taking into account the costs of parenthood this study sheds new light on the effect of children on their parents' level of life satisfaction. It extends previous research by showing that parenthood by itself has substantial positive effects on life satisfaction, and that fathers and mothers bear different costs of parenthood, which negate the happiness-enhancing effects of children. My findings further suggest that analysis of parenthood–happiness relationships may potentially contribute to research on the determinants of low fertility. Because fertility plans are influenced by expected gains in happiness (Kohler, 2012), it would be interesting to demographers whether and to what extent family policy arrangements affect parental happiness. Demographic studies have regularly suggested that family policy programs such as child allowance, parental leave policies, and child-care provisions generate positive fertility responses (Kalwij, 2010; Rindfuss, Guilkey, Morgan, & Kravdal, 2010). Nonetheless, as Kalwij (2010) notes, the empirical evidence on the impact of family-friendly policy on fertility is scarce and inconclusive. Research on the extent to which parental happiness is affected by family

policy settings could corroborate the postulated association between family policy settings and fertility and give valuable insight into the effect of specific family policy arrangements on parental subjective well-being.

*Table 1: Women's and Men's Characteristics by Parenthood Status: Descriptive Statistics (N=13,093)*

| | Nonmothers | | Mothers | | Nonfathers | | Fathers | |
|---|---|---|---|---|---|---|---|---|
| Variable | M | SD | Mean | SD | Mean | SD | Mean | SD |
| Life satisfaction | 7.23 | 1.68 | 7.22 | 1.59 | 7.19 | 1.66 | 7.09 | 1.60 |
| Number of children | | | | | | | | |
| One child | | | 0.40 | 0.49 | | | 0.39 | 0.48 |
| Two children | | | 0.46 | 0.50 | | | 0.46 | 0.50 |
| Three or more children | | | 0.15 | 0.36 | | | 0.15 | 0.36 |
| Age of oldest child | | | | | | | | |
| Women pregnant with first child | | | 0.03 | 0.16 | | | 0.03 | 0.16 |
| Oldest child 0–1 year old | | | 0.11 | 0.31 | | | 0.11 | 0.31 |
| Oldest child 2–5 years old | | | 0.22 | 0.42 | | | 0.22 | 0.42 |
| Oldest child 6–12 years old | | | 0.36 | 0.48 | | | 0.36 | 0.48 |
| Oldest child 13–17 years old | | | 0.29 | 0.45 | | | 0.29 | 0.45 |
| Time use outside paid work in | | | | | | | | |
| Household chores | 3.45 | 2.04 | 5.18 | 2.38 | 2.40 | 1.69 | 2.14 | 1.76 |
| Child care | | | 5.75 | 3.38 | | | 1.72 | 1.36 |
| Leisure time | 2.01 | 1.68 | 1.43 | 1.28 | 2.00 | 1.70 | 1.44 | 1.36 |
| Equivalent household income in €[a] | 1876.57 | 956.67 | 1346.71 | 636.92 | 1848.50 | 888.55 | 1340.44 | 620.01 |
| Employment status | | | | | | | | |
| Full-time employment ( >= 35 hours/week) | 0.67 | 0.47 | 0.18 | 0.38 | 0.86 | 0.35 | 0.90 | 0.31 |
| Part-time employment (1–34 hours/week) | 0.16 | 0.37 | 0.35 | 0.48 | 0.04 | 0.20 | 0.03 | 0.16 |
| Unemployment | 0.08 | 0.29 | 0.08 | 0.27 | 0.07 | 0.26 | 0.07 | 0.25 |
| Economically inactive | 0.09 | 0.29 | 0.36 | 0.48 | 0.03 | 0.17 | 0.01 | 0.11 |
| Subjective health status | | | | | | | | |
| Very good | 0.12 | 0.33 | 0.11 | 0.31 | 0.13 | 0.34 | 0.11 | 0.31 |
| Good | 0.48 | 0.50 | 0.54 | 0.50 | 0.50 | 0.50 | 0.54 | 0.50 |
| Satisfactory | 0.27 | 0.45 | 0.27 | 0.44 | 0.27 | 0.44 | 0.27 | 0.45 |
| Poor | 0.10 | 0.30 | 0.07 | 0.26 | 0.08 | 0.27 | 0.07 | 0.25 |
| Bad | 0.02 | 0.14 | 0.01 | 0.26 | 0.01 | 0.11 | 0.01 | 0.11 |
| Age (years) | 36.54 | 11.29 | 35.14 | 6.03 | 38.05 | 10.76 | 37.84 | 6.52 |
| N individual-years | 10,315 | | 22,701 | | 9,362 | | 22,409 | |

[a]1 € ≈ $1.31

*Table 2: Fixed effects Regression Models Predicting Change in Life Satisfaction from Number of Children and Covariates for Women (N= 6,649) and Men (N=6,444)*

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---|---|---|---|---|---|---|---|---|
| Variable | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* |
| Women | | | | | | | | |
| Number of children | | | | | | | | |
| One child | 0.045 | 0.041 | 0.077 | 0.049 | 0.122* | 0.059 | 0.165** | 0.059 |
| Two children | 0.072 | 0.057 | 0.106 | 0.065 | 0.161* | 0.076 | 0.223** | 0.076 |
| Three or more children | 0.073 | 0.089 | 0.115 | 0.095 | 0.177 | 0.106 | 0.255* | 0.105 |
| Employment status[a] | | | | | | | | |
| Part-time employment (1–34 hr) | | | -0.024 | 0.033 | -0.028 | 0.033 | -0.010 | 0.033 |
| Unemployment | | | -0.442** | 0.047 | -0.451** | 0.049 | -0.413** | 0.049 |
| Economically inactive | | | -0.047 | 0.038 | -0.048 | 0.041 | -0.011 | 0.041 |
| Time use outside paid work | | | | | | | | |
| Daily household chores (hr) | | | | | -0.001 | 0.005 | -0.001 | 0.005 |
| Daily child care (hr) | | | | | -0.003 | 0.004 | -0.003 | 0.004 |
| Daily leisure time (hr) | | | | | 0.020** | 0.007 | 0.020** | 0.007 |
| Equivalent household income/1000 | | | | | | | 0.173** | 0.024 |
| $R^2$ (within) | 0.063 | | 0.070 | | 0.070 | | 0.073 | |
| Men | | | | | | | | |
| Number of children | | | | | | | | |
| One child | 0.025 | 0.042 | 0.036 | 0.040 | 0.038 | 0.044 | 0.133** | 0.045 |
| Two children | 0.056 | 0.565 | 0.067 | 0.055 | 0.070 | 0.057 | 0.200** | 0.060 |
| Three or more children | 0.111 | 0.082 | 0.139 | 0.080 | 0.140 | 0.082 | 0.296** | 0.084 |
| Employment status[a] | | | | | | | | |
| Part-time employment (1–34 hr) | | | -0.161* | 0.063 | -0.171** | 0.063 | -0.154* | 0.063 |
| Unemployment | | | -0.911** | 0.049 | -0.955** | 0.053 | -0.902** | 0.053 |
| Economically inactive | | | -0.390** | 0.119 | -0.432** | 0.121 | -0.385** | 0.120 |
| Time use outside paid work | | | | | | | | |
| Daily household chores (hours) | | | | | 0.009 | 0.006 | 0.009 | 0.006 |
| Daily child care (hours) | | | | | 0.003 | 0.007 | 0.003 | 0.007 |
| Daily leisure time (hours) | | | | | 0.014 | 0.008 | 0.015 | 0.008 |
| Equivalent household income[b] | | | | | | | 0.229** | 0.024 |
| $R^2$ (within) | 0.071 | | 0.095 | | 0.096 | | 0.100 | |

*Note*: All models include subjective health status, age, age squared, and indicator variables for the survey year.

Subjective health status is rated on a five-point scale: very good; good; satisfactory; poor; bad. Age was controlled by a series of dummy variables for each year of age of the individual.

[a]Reference group: full-time employment ( >= 35 hr)

[b]In 1,000 €

*$p$ < .05. **$p$ < .01.

*Table 3: Fixed Effects Regression Models Predicting Change in Life Satisfaction from Number of Children within Employment Arrangements and Covariates for Women (N=5,854) and Men (N=5,824)*

| | Model 5 | | | | Model 6 | | | |
|---|---|---|---|---|---|---|---|---|
| | Women | | Men | | Women | | Men | |
| Variable | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* |
| No child, dual-earner model *(reference group)* | - | | - | | - | | - | |
| No child, one-and-a-half-earner model | 0.004 | 0.063 | -0.001 | 0.058 | 0.013 | 0.063 | 0.026 | 0.058 |
| No child, male-breadwinner model | 0.206 | 0.135 | 0.081 | 0.089 | 0.218 | 0.137 | 0.147 | 0.088 |
| 1 child, dual-earner model | 0.036 | 0.068 | 0.007 | 0.064 | 0.128 | 0.074 | 0.081 | 0.067 |
| 1 child, one-and-a-half-earner model | 0.059 | 0.055 | -0.060 | 0.054 | 0.176** | 0.068 | 0.041 | 0.058 |
| 1 child, male-breadwinner model | 0.070 | 0.048 | 0.020 | 0.045 | 0.216** | 0.069 | 0.152** | 0.050 |
| 2 children, dual-earner model | 0.054 | 0.096 | -0.068 | 0.085 | 0.193 | 0.103 | 0.051 | 0.088 |
| 2 children, one-and-a-half-earner model | 0.052 | 0.068 | -0.037 | 0.066 | 0.203* | 0.081 | 0.098 | 0.071 |
| 2 children, male-breadwinner model | 0.030 | 0.063 | -0.033 | 0.057 | 0.207** | 0.083 | 0.125** | 0.063 |
| 3 children, dual-earner model | -0.200 | 0.204 | -0.157 | 0.174 | -0.035 | 0.201 | -0.018 | 0.174 |
| 3 children, one-and-a-half-earner model | 0.112 | 0.114 | -0.040 | 0.095 | 0.296* | 0.125 | 0.124 | 0.099 |
| 3 children, male-breadwinner model | 0.048 | 0.096 | -0.054 | 0.080 | 0.250** | 0.112 | 0.230** | 0.085 |
| Other explanatory variables | | | | | | | | |
| Time use outside paid work[a] | No | | | | Yes | | | |
| Equivalent household income | No | | | | Yes | | | |
| $R^2$ (within) | 0.066 | | 0.072 | | 0.069 | | 0.076 | |

*Note*: All models include subjective health status, age, age squared, and indicator variables for the survey year.

Subjective health status is rated on a five-point scale: very good; good; satisfactory; poor; bad.

[a]Time use outside paid work is measured by three variables comprising the amount of time in hours spent on household chores, child care, and leisure, respectively, on a typical weekday.

*$p < .05$. **$p < .01$.

*Table 4: Fixed effects Regression Models Predicting Change in Life Satisfaction from Age of Oldest Child and Covariates for Women (N= 6,649) and Men (N=6,444)*

| | Model 7 | | | | Model 8 | | | |
|---|---|---|---|---|---|---|---|---|
| | Women | | Men | | Women | | Men | |
| Variables | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* |
| Women pregnant with first child | 0.333** | 0.061 | 0.139* | 0.062 | 0.340** | 0.060 | 0.143* | 0.061 |
| Oldest child 0–1 year old | 0.215** | 0.050 | 0.129** | 0.048 | 0.320** | 0.064 | | 0.051 |
| Oldest child 2–5 years old | 0.089 | 0.058 | 0.024 | 0.057 | 0.209** | 0.070 | 0.130* | 0.060 |
| Oldest child 6–12 years old | 0.117 | 0.076 | 0.101 | 0.073 | 0.237** | 0.085 | | 0.074 |
| Oldest child 13–17 years old | 0.175 | 0.093 | 0.122 | 0.091 | 0.301** | 0.099 | | 0.091 |
| Other explanatory variables | | | | | | | | |
| Employment status[a] | No | | | | Yes | | | |
| Time use outside paid work[b] | No | | | | Yes | | | |
| Equivalent household income | No | | | | Yes | | | |
| $R^2$ (within) | 0.065 | | 0.072 | | 0.074 | | 0.100 | |

*Note*: All models include subjective health status, age, age squared, and indicator variables for the survey year.

Subjective health status is rated on a five-point scale: very good; good; satisfactory; poor; bad.

[a]Employment status is measured by four variables: full-time employment ( >= 35 hr per week), part-time employment (<35 hr per week), unemployment, economically inactive.

[b]Time use outside paid work is measured by three variables comprising the amount of time in hours spent on household chores, child care, and leisure, respectively, on a typical weekday.

*$p < .05$. **$p < .01$.

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