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Happiness begets children? Evidence for a bi-directional link between well-being and number of children

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The purpose of the current research was to examine the association between different facets of well-being and parenthood status. Specifically, using two longitudinal data sets, the present research explored whether individuals who possess high cognitive (Studies 1 & 2), emotional, and psychological well-being (Study 2) are more likely to subsequently become parents compared to their less happy counterparts. The results of both studies demonstrated that well-being at Time 1 positively predicted number of children at Time 2, controlling for a number of relevant variables (e.g. income, age). Additional analyses revealed that the relationship between cognitive well-being and subsequently having children was particularly strong for people who did not have any children previously. Potential mechanisms explaining how and why well-being may influence parenthood are discussed.

Keywords: parenthood; well-being; life satisfaction; happiness; longitudinal data

More than three decades of research have examined the relationship between parenthood status and well-being, yielding many mixed findings (see Nelson, Kushlev, & Lyubomirsky, 2014, for a review). For example, longitudinal studies show that married couples experience a decline in marital satisfaction and a higher level of stress, anxiety, and depression after childbirth (e.g. Hoffenaar, van Balen, & Hermanns, 2010; Twenge, Campbell, & Foster, 2003), suggesting that children often cause emotional distress in the lives of their parents (see also, Anderson, Russell, & Schumm, 1983; Evenson & Simon, 2005; McLanahan & Adams, 1987; Umberson & Williams, 1999). Other findings, however, directly contradict the idea that childrearing evokes pain and hardship (Blanchflower & Oswald, 2004; Kohler, Behrman, & Skytthe, 2005; White & Dolan, 2009). For instance, a provocative set of studies recently demonstrates that parenthood is actually positively associated with a variety of indicators of well-being (Nelson, Kushlev, English, Dunn, & Lyubomirsky, 2013). These researchers found that parents experience more positive emotions, evaluate their lives more positively, and experience more meaning in life compared to people who do not have children, suggesting that childrearing actually produces more joy than misery for many people.

While the aforementioned studies provide much needed information about the link between parenthood and well-being, the direction of this relationship is one question that is often lost in the shuffle of this debate. Most research implies that parenthood leads to happiness (or misery). However, is it possible that happiness (or

misery) itself is an antecedent to parenthood? In other words, does well-being not only emerge as an outcome of childrearing but also affect the probability of having a child? Recent findings provide initial evidence supporting the possibility that happiness predicts future parenthood status (Luhmann, Hofmann, Eid, & Lucas, 2012). Indeed, Luhmann, Lucas, Eid, and Diener (2013) analyzed three national data sets (from Australia, United Kingdom, and Germany) and found that couples who were satisfied with their lives were more likely to become parents in the future.

Luhmann et al.'s (2013) findings are important and offer initial evidence that happiness predicts the likelihood of becoming a parent. One question that remains unanswered, however, is whether these findings generalize to other samples. This is especially important given the mixed findings regarding the overall link between well-being and parenthood status. As such, one goal of the present studies was to attempt to replicate Luhmann et al.'s (2013) findings using samples of participants from North America.

A second aim of the current research was to test how different facets of well-being influence the likelihood of having children in the future. Recall, Luhmann et al. (2013) tested whether a cognitive aspect of well-being (i.e. life satisfaction) was a precursor of parenthood. However, other aspects of well-being such as hedonic (e.g. positive emotion) and eudaimonic well-beings (e.g. purpose in life) may also predict future parenthood status. For example, the idea that hedonic well-being influences parenthood is consistent with a host of

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research examining how positive emotions influence daily functioning and social behavior (e.g. Fredrickson, 2001). In fact, positive emotions engender a multitude of advantages related to childrearing such as satisfying social relationships, higher income, and better health (Lyubomirsky, King, & Diener, 2005). The possibility that hedonic well-being is conducive to reproduction also resonates with a selection of theories on affect and cognition. According to Carver and Scheier (1990, 1998), positive affect serves a signaling function that provides feedback that things are going well and it is safe to seek out and pursue new goals (Carver, 2003). It may therefore be the case that couples who frequently experience positive emotions tend to pursue family-related goals such as childrearing compared to their peers whose experience of positive emotion is impoverished.

While clear predictions can be made with regard to how cognitive and hedonic well-being might influence the likelihood of having a child, it is less clear how eudaimonic well-being relates to the number of children one has in the future. On one hand, an evolutionary perspective hints at the possibility that eudaimonic well-being may increase the likelihood of having a child (Kenrick, Griskevicius, Neuberg, & Schaller, 2010). For instance, in their revised model of the hierarchy of basic human needs, Kenrick et al. (2010) place parenting at the top of the pyramid of human needs, above self-actualization. Given the theoretical link between self-actualization and eudaimonic well-being (Waterman, 1993), this evolutionary perspective suggests a possibility that people high in eudaimonic well-being (i.e. those closer to self-actualization) are more likely to seek parenthood. Although this possibility is provocative, the opposite prediction is also plausible. For example, people high in eudaimonic well-being are thought to have cultivated their true potential and thus possess a better understanding of their purpose and meaning in life. As such, those who enjoy high eudaimonic well-being might be less enticed to have children, at least as a means of satisfying a need. Given these conflicting perspectives, we did not have clear hypotheses regarding the influence of eudaimonic well-being on how many children people have in the future.

In the present research, we investigate whether one's happiness and well-being levels predict future number of children while attempting to address the issues above. Specifically, the purpose of the current research was to (1) replicate the previous findings of the influence of life satisfaction on parenthood with American samples and (2) examine the predictive utility of other facets of well-being on producing offspring in the future. To achieve this goal, we employed two longitudinal data sets that measured well-being, number of children, and other relevant personal information (e.g. income). In Study 1, we analyzed an American lawyer sample and attempted to

replicate Luhmann et al.'s (2013) findings using an US sample. In Study 2, we used a more representative American sample and assessed multiple indicators of well-being, to test whether hedonic and eudaimonic well-beings also predict future parenthood status.

In addition to our primary aims, our data sets allowed us to explore whether previous parenthood status would moderate our hypothesized effects. It is possible, for example, that happiness is a stronger predictor of future children for parents who are currently childless. Although we did not have clear predictions for this moderation effect, we conducted exploratory analyses in both studies to test this possibility.¹

Study 1

Method

Participants

Participants were from the National Survey of Lawyers' Career Satisfaction survey, Waves I and II (1984 and 1990), conducted by Ronald L. Hirsh for the American Bar Association (American Bar Association, 1990; Hirsch, 1992). The initial 1984 study consisted of a random probability sample of 2281 lawyers drawn from lists that included an estimated 90% of all US lawyers. In 1990, 1413 of the original participants (61.9%) completed the follow-up survey. We focused on 559 respondents (462 males, 94 females, and 3 unreported) who reported the number of children they had at Time 1 (1984) and Time 2 (1990). The age of participants in the final sample ranged from 25 to 82 years at Time 1 ($M = 37.64$, $SD = 10.14$).

Measures and design

Participants completed the initial and follow-up surveys through either a telephone interview or a self-administered questionnaire addressing aspects of respondents' work environment, job history, personal attitudes, educational background, and demographic characteristics.

Satisfaction with life

We used satisfaction with life (SWL) as an indicator of well-being. At both occasions, SWL was assessed through a single question, asking participants to rate an item, 'There is almost nothing in my life with which I am satisfied', on a 4-point scale (1 = *very descriptive*, 4 = *not at all descriptive*).

Number of children

Participants reported their number of children using a 6-point scale (0 = *none*, 5 = *five or more*; $M = 1.39$, $SD = 1.39$, at Time 1; $M = 1.99$, $SD = 1.31$, at Time 2).

Covariates

Age, gender, income, and number of children at Time 1 were included in our analyses as covariates. Total household income was assessed on an 8-point scale (1 = less than \$15,000, 8 = \$2,000,000 or more). The median income was 5 (\$55,000–\$74,999) at Time 1 and 7 (\$1,000,000–\$1,000,999) at Time 2.

Results and discussion

Preliminary analyses

Correlations among all measures are shown in Table 1. Most relevant to our purpose, SWL at Time 1 was positively associated with number of children at both Time 1 and Time 2.

Primary analyses

We first conducted a hierarchical linear regression analysis, predicting number of children at Time 2 from SWL at Time 1 while controlling for age, gender, income, and number of children at Time 1. As shown in Table 2, results revealed that all control variables except income at Time 1 significantly predicted number of children at Time 2, accounting for a large proportion of variance ($\Delta R^2 = 0.522, p < 0.001$).² As predicted, however, SWL at Time 1, entered on the second step, still significantly predicted number of children at Time 2 above and beyond these covariates ($\Delta R^2 = 0.005, p = 0.02$).

Previous children as a moderator

Does life satisfaction differentially predict future number of children for parents and nonparents at Time 1? To answer this question, we entered an interaction term between the previous parenthood status (0 = nonparent, 1 = current parent) and SWL at Time 1 in a regression analysis predicting number of children at Time 2. We found that previous parenthood status significantly moderated the link between SWL and number of children at Time 2 ($\beta = -0.13, p = 0.005$). SWL at Time 1 was a stronger predictor of children at Time 2 for people who did not have children at Time 1 ($\beta = 0.16, p < 0.001$) compared to people who did ($\beta = -0.01, p > 0.25$).

Study 1 replicates the previous findings (Luhmann et al., 2013) with an American sample. However, generalization of these findings is limited by characteristics of the sample. Lawyers usually have a high social status, earn relatively high incomes, and are not as racially diverse as people from other occupations. In Study 2, we sought to address these concerns by using a nationally representative, public data-set – the Midlife Development in the United States (MIDUS) data-set. This sample consisted of people whose occupation, income, race and

Table 1. Summary of intercorrelations, means, and standard deviations for scores on age, gender, income at Time 1, number of children at Time 1 and Time 2, and well-being measures at Time 1 and Time 2.

Measure	1	2	3	4	5	6	7	8	9	10	11	M	SD
1. Age	—											46.46	12.51
2. Gender	0.17***	—										0.47	0.50
3. Income T1	0.43***	0.08*	—									18.41	9.97
4. # Children T1	0.57***	0.22***	0.34***	—								2.30	1.76
5. # Children T2	0.36***	0.23***	0.20***	0.71***	—							2.50	1.76
6. SWL T1	0.08*	0.02	0.09**	0.08*	0.12***	—						7.77	1.24
7. SWL T2	0.10**	0.09**	0.04	0.06	0.11***	0.35***	—					7.76	1.25
8. EWB T1								0.40***				1.88	1.19
9. EWB T2								0.59***	0.55***			1.91	1.15
10. PWB T1								0.43***	—			16.74	2.32
11. PWB T2								—		—		16.63	2.43
M	37.64	0.83	4.69	1.39	1.99	3.63	3.61						
SD	10.14	0.38	1.63	1.39	1.31	0.68	0.67						

Notes: Intercorrelations for the Lawyers sample (Study 1) are presented below the diagonal, and intercorrelations for the MIDUS sample (Study 2) are presented above the diagonal. Means and standard deviations for the Lawyers sample are presented in the horizontal rows, and means and standard deviations for the MIDUS sample are presented in the vertical columns. Gender: female = 0, male = 1; income T1: 1–8 (Study 1), 1–31 (Study 2); SWL = satisfaction with life; EWB = emotional well-being; PWB = psychological well-being; T1 = Time 1; T2 = Time 2. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

ethnic backgrounds were comparable to the general population. In addition, this data-set included a more psychometrically sound measure of life satisfaction, as well as more diverse indicators of well-being. Thus, in Study 2, we attempted to replicate the previous findings with a more diverse sample and extensive battery of well-being measures to test whether both hedonic and eudaimonic well-beings predict number of children.³ We also explored whether parenthood status would moderate the link between having children and life satisfaction, as well as whether it would interact with other forms of well-being to predict future number of children.

Study 2

Method

Participants

Participants were from the MIDUS survey, conducted in 1995–1996 (Time 1) and 2004–2006 (Time 2). A national sample of 7108 noninstitutionalized adults from the 48 contiguous states were recruited via random-digit dialing of telephone numbers (Brim, Ryff, & Kessler, 2004). Approximately 10 years later, participants were contacted again. Seventy-five percent of the sample agreed to participate in a follow-up survey. All participants (4963; females = 2647, males = 2316) who reported their number of children at Time 1 and 2 were analyzed in Study 2. Their ages ranged from 20 to 75 years ($M = 46.5$, $SD = 12.5$) at Time 1 and from 28 to 84 years ($M = 55.4$, $SD = 12.4$) at Time 2.

Measures and design

Respondents completed either a telephone interview or a self-administered questionnaire assessing their mental well-being and demographic characteristics, as well as a variety of other measures.

SWL

At both Time 1 and 2, participants rated domains of life satisfaction including overall satisfaction, satisfaction with work, health, relationship with spouse or partner, and relationship with children, on an 11-point scale (0 = *worst*, 10 = *best*). The ratings were averaged to form a composite SWL score ($\alpha = 0.68$ at Time 1; $\alpha = 0.66$ at Time 2).

Emotional well-being

Participants rated how often during the past 30 days they felt various emotions on a 5-point scale (1 = *none of the time*, 5 = *all of the time*). Positive affect was computed by averaging 6 positive affect items (e.g. cheerful; $\alpha = 0.91$ at Time 1; $\alpha = 0.91$ at Time 2). Negative affect

was computed by averaging 6 negative affect items (e.g. nervous; $\alpha = 0.87$ at Time 1; $\alpha = 0.85$ at Time 2). An emotional well-being (EWB) score was formed by subtracting negative affect from positive affect and was used as an indicator of hedonic well-being (Diener, 1984).

Psychological well-being

Psychological well-being (PWB) was calculated by averaging scores of the short forms of six well-being scales (i.e. autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance; Ryff, 1989; α 's = 0.35–0.60 at Time 1; α 's = 0.29–0.67 at Time 2), which could range from 1 (*strongly disagree*) to 7 (*strongly agree*). The PWB scale is argued to be a valid measure of eudaimonic well-being and has been administered extensively in empirical research (Keyes, Shmotkin, & Ryff, 2002; Ryff, 1989; Ryff & Keyes, 1995; Ryff & Singer, 2008).

Number of children

Participants reported their number of children by answering an open-ended question. Responses ranged from 0 to 10 ($M = 2.30$, $SD = 1.76$) at Time 1 and from 0 to 17 ($M = 2.50$, $SD = 1.76$) at Time 2.

Covariates

Age, gender, income, and number of children at Time 1 were entered as covariates in our analyses. Personal annual income was assessed on a 31-point scale (1 = *less than \$0/loss*, 31 = *\$100,000 or more*) at Time 1 and on a 42-point scale (1 = *less than \$0/loss*, 42 = *\$200,000 or more*) at Time 2. The median income was 23 (\$20,000–\$24,999) at Time 1 and 15 (\$25,000–\$27,499) at Time 2.

Results and discussion

Preliminary analyses

Correlations among all measures are shown in Table 1. Again, most well-being measures were positively associated with number of children at both Time 1 and Time 2.

Primary analyses

We conducted several hierarchical linear regression analyses, predicting number of children at Time 2 from various well-being measures at Time 1 while controlling for age, gender, income, and number of children at Time 1. As shown in Table 2, we found that all control variables significantly or marginally predicted number of children at Time 2, accounting for a large proportion of variance (ΔR^2 's > 0.692, $ps < 0.001$).⁴ Consistent with Study 1,

Table 2. Regression analyses: predicting number of children at Time 2 from age, gender, income at Time 1, number of children at Time 1, and well-being measures at Time 1.

Predictor	Study 1 # Children T2				Study 2 # Children T2			
	<i>B</i>	β	<i>t</i>	ΔR^2	<i>B</i>	β	<i>t</i>	ΔR^2
Age	-0.009	-0.070	-1.83 [†]		-0.015	-0.106	-11.13***	
Gender	0.299	0.085	2.74**		0.088	0.025	2.79**	
Income T1	-0.026	-0.032	-0.96		-0.004	-0.024	-2.58**	
# Children T1	0.698	0.739	19.79***	0.522***	0.870	0.867	95.02***	0.694***
SWL T1	0.137	0.070	2.32*	0.005*	0.030	0.021	2.53*	0.001*
Age					-0.015	-0.105	-11.00***	
Gender					0.083	0.024	2.63**	
Income T1					-0.004	-0.023	-2.50*	
# Children T1					0.870	0.867	94.69***	0.692***
EWB T1					0.025	0.017	2.00*	0.001*
Age					-0.015	-0.104	-10.97***	
Gender					0.088	0.025	2.79**	
Income T1					-0.004	-0.025	-2.67**	
# Children T1					0.871	0.868	94.99***	0.693***
PWB T1					0.016	0.020	2.45*	0.001*

Notes: Gender: female = 0, male = 1; income T1: 1–8 (Study 1), 1–31 (Study 2); SWL = satisfaction with life; EWB = emotional well-being; PWB = psychological well-being; T1 = Time 1; T2 = Time 2.

[†] $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

SWL at Time 1 significantly predicted number of children at Time 2 with all covariates controlled for ($\Delta R^2 = 0.001$, $p < 0.05$). Importantly, EWB and PWB at Time 1 also positively predicted number of children at Time 2 above and beyond all covariates (ΔR^2 's = 0.001, $ps < 0.05$).

Previous children as a moderator

To test whether previous parenthood status moderates the effect of happiness on later number of children, we again ran a regression analysis using previous parenthood status (0 = *nonparent*, 1 = *current parent*) as a moderator. For this analysis, we recomputed SWL by averaging four items, excluding the item assessing relationship satisfaction with children at Time 1 ($M = 7.37$, $SD = 1.34$; $\alpha = 0.67$). The results revealed that only SWL significantly interacted with parenthood status to predict number of later children ($\beta = -0.04$, $p = 0.06$). Consistent with Study 1, SWL at Time 1 was a stronger predictor of children at Time 2 for those who did not have children ($\beta = 0.06$, $p = 0.002$), compared to those who previously had children ($\beta = 0.02$, $p = 0.04$).⁵

Consistent with Study 1, Study 2 showed that life satisfaction, as well as EWB and PWB, significantly predicted future number of children, suggesting that the effect of well-being on parenthood can be generalized to other measures of well-being. Further, Study 2 revealed partial support for the idea that having children moderates the influence of well-being on the likelihood of

having children in the future. Again, those high in cognitive well-being were especially likely to have children in the future if they were currently childless.

General discussion

Together, the current studies suggest that children may not only serve as a source of happiness, but happiness itself is linked to future reproduction. In both studies, participants' well-being was shown to predict the number of participants' children approximately a decade later. Specifically, we replicated Luhmann et al.'s (2013) findings demonstrating that life satisfaction predicts the likelihood of having children using data sets derived from American samples (Studies 1 and 2). More importantly, we extend these findings to show that two other aspects of well-being (i.e. hedonic and eudaimonic well-beings) predict whether an individual will have more children in the future (Study 2). Our findings further support recent arguments that parenthood is associated with more joy than misery (Nelson et al., 2013), but also suggest that happiness predicts important life outcomes (e.g. Luhmann et al., 2013; Lyubomirsky et al., 2005).

The present research suggests that many aspects of well-being may have the prospective effects on having children. Although aspects of well-being accounted for similar amounts of variance of the future number of children, it is possible that each well-being dimension might affect childbirth through distinct mechanisms. Hedonic well-being, indicated as affective balance

between positive and negative emotion, may influence parenthood through a less direct mechanism. For instance, positive emotion allows people to build additional psychological resources available for constructing better social relationships and achieving financial goals, both of which can facilitate the probability of having children (Fredrickson, 2001). In addition, people in a positive affective state may use the feeling as information that they are currently satisfied, motivating them to explore new opportunities such as childrearing (Carver, 2003).

Eudaimonic well-being, on the other hand, may affect parenthood in a more direct way. People who benefit from high level of eudaimonic well-being are more likely to have clear goals and aims which, for some, may include having a (or another) child. It is also possible that those who have satisfied fundamental psychological needs (i.e. those high in PWB) are more likely to seek out parenting (Kenrick et al., 2010). Future research needs to more thoroughly investigate the psychological mechanisms underlying the link between hedonic and eudaimonic of well-beings and parenthood.⁶

In our studies, we explored whether variables related to reproduction moderate or account for the effect of happiness on parenthood. While participants' biological characteristics (age and gender) and socioeconomic status (income) did not restrict or explain away the influence of well-being on parenthood, we found some evidence that previous parenthood status (whether they already had any children) moderated this effect. In Study 1, lawyers who were highly satisfied with their lives were more likely to have children in the future if they did not already have children. Similarly, in Study 2, people who reported greater SWL (but not EWB or PWB) were more likely to have children in the future particularly if they did not previously have children. One possible explanation for this finding is that the decision to have the first child may be affected by global level of life satisfaction and optimistic attitude toward caregiving, but once people already had a child the decision to raise another one might be more influenced by other factors such as temperament of the first child, financial burdens, or social supports for caregivers, which are often thought to be associated with one's judgment of own life. In future research, it would be interesting to examine whether the realistic issues associated with parenting override the effect of cognitive well-being and optimism on the willingness to have additional children.

This finding also suggests the possibility that life satisfaction affects people's decision to reproduce via a different mechanism compared to emotional and eudaimonic well-being. Because life satisfaction is considered as a trait-like construct (Diener, Suh, Lucas, & Smith, 1999), the prospective effect of life satisfaction on parenthood is expected to be stable over time.

Indeed, Luhmann et al. (2013) demonstrated that higher life satisfaction was consistently associated with the increased likelihood of bearing children. However, their study examined whether or not the event of childbirth occurred. When exploring changes in actual number of children, our study found that the prospective effect of life satisfaction on childbirth was restricted by the life circumstance – the previous parenthood status. This is consistent with an idea that a measure of life satisfaction and its effect are not immune to change and situational factors (e.g. Lucas & Donnellan, 2007). Little evidence that the relationships between other well-being indicators and having more children were moderated by the previous parenthood status suggests a possibility that hedonic and eudaimonic well-beings may exert additive effects on childbirth that allow people to overcome debilitating effects of life circumstances (e.g. Fredrickson, 2001).

Yet another mechanism underlying the link between well-being and producing children might be that happy people are more likely to be in a relationship and/or get married and, in turn, procreate. Indeed, previous research demonstrated that happy people are more likely to get married (Easterlin, 2003; Stutzer & Frey, 2006) and be in a relationship (Diener & Seligman, 2002). Thus, it is very plausible that the prospective effect of well-being on future reproduction is mediated by changes in relationship or marital status. The longitudinal data we employed in the present research had responses for only two time lags, which makes it difficult to show such a mediational process (cf. see endnote 5). It would be worthwhile to further explore this mechanism in the future and thereby helping us better understand the relationship between happiness and parenthood.

Although our primary findings were consistent across two samples using various measures of well-being, several limitations exist. For example, the effect sizes were relatively small across analyses, perhaps not unexpectedly considering the number of variables that influence the probability of having a child (e.g. physical health). While our effect sizes were comparable to previous findings (e.g. Luhmann et al., 2013; Nelson et al., 2013), clearly happiness does not account for all of the variance associated with parenthood. Our subjects were also older than many first time parents, which might temper confidence about the generalizability of the findings. For example, it is possible that well-being is a much weaker predictor of future parenthood status for people who are younger (e.g. teens). While these limitations exist, our findings provide further evidence that well-being contributes to the likelihood of having children, helps clarify current debate regarding the relationship between parenthood and well-being, and, importantly, raises many questions to be addressed by future research.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. We occasionally used the terms parenthood status and number of children interchangeably throughout the manuscript. However, unlike previous research that focuses on parenthood status (e.g. Luhmann et al., 2013), we report how well-being influences the number of future children. Using the alternative dependent variables (i.e. parenthood status), our results for the primary analyses remained significant ($ps < 0.05$); however, our exploratory interaction effects did not significantly predict this categorical dependent variable ($ps > 0.16$).
2. We did not find moderating effects of gender, age, or income on the effect of life satisfaction on the future number of children in Study 1.
3. Another limitation of the sample of Study 1 is that the range for reporting the number of children was restricted (from 0 to 5). It is possible that there were people who could not report the real number of children due to this restriction, which might have affected our main findings. We explored such a possibility and found that there were only 24 people who reported that they have five children at Time 2 (those whose report of the number of children might have been restricted), and SWL still predicted the number of children at Time 2 with these cases excluded ($\beta = 0.09$, $p = 0.006$). We did not address this concern further because there was no restriction of range for the number of children in the MIDUS sample of Study 2.
4. In Study 2, neither gender nor income moderated the effect of happiness on the future number of children. However, age did moderate the effect of PWB on number of children ($\beta = -0.02$, $p = 0.008$). Specifically, younger people were more likely to have children if they had higher level of PWB ($\beta = 0.04$, $p < 0.001$) while number of children among older people was not different depending on their level of PWB ($\beta = -0.003$, $p > 0.25$).
5. We also tested a mediational link in which people high in well-being are more likely to be in a relationship or get married and then have more children later. In a series of regression equation models, each well-being indicator at Time 1 was entered as an independent variable, and relationship or marital status at Time 2 was entered as a mediating variable, and number of children at Time 2 was a dependent variable while controlling for demographic variables, number of children at Time 1, and relationship or marital status at Time 1. Notably, we were only able to conduct these analyses in Study 2 because there was no difference in relationship or marital status between Time 1 and 2 in Study 1 (i.e. a covariate and the mediator was the same). Results found that the links between all well-being indicators at Time 1 and number of children at Time 2 were fully mediated by either later relationship or marital status at Time 2.
6. We also examined whether eudaimonic well-being would predict future children controlling for hedonic well-being. When PWB and SWL (or EWB) were entered together in the regression model, neither well-being indicator remained significant ($\beta = 0.013$, $p = 0.17$ for PWB and $\beta = 0.014$, $p = 0.14$ for SWL; $\beta = 0.016$, $p = 0.12$ for PWB and $\beta = 0.007$, $p = 0.50$ for EWB), presumably due to the high correlation between eudaimonic and hedonic well-beings (Kashdan, Biswas-Diener, & King, 2008).

References

- American Bar Association. (1990). *The state of the legal profession*. Chicago, IL: Author.
- Anderson, S. A., Russell, C. S., & Schumm, W. R. (1983). Perceived marital quality and family life-cycle categories: A further analysis. *Journal of Marriage and the Family*, 45, 127–139. doi:10.2307/351301
- Blanchflower, D. G., & Oswald, A. J. (2004). Well-being over time in Britain and the USA. *Journal of Public Economics*, 88, 1359–1386. doi:10.1016/S0047-2727(02)00168-8
- Brim, O. G., Ryff, C. D., & Kessler, R. C. (2004). *How healthy are we? A national study of well-being at midlife*. Chicago, IL: University of Chicago Press.
- Carver, C. S. (2003). Pleasure as a sign you can attend to something else: Placing positive feelings within a general model of affect. *Cognition and Emotion*, 17, 241–261. doi:10.1080/02699930302294
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, 97, 19–35. doi:10.1037//0033-295X.97.1.19
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York, NY: Cambridge University Press.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542–575. doi:10.1037//0033-2909.95.3.542
- Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, 13, 81–84. doi:10.1111/1467-9280.00415
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276–302. doi:10.1037//0033-2909.125.2.276
- Easterlin, R. A. (2003). Explaining happiness. *Proceedings of the National Academy of Sciences*, 100, 11176–11183. doi:10.1073/pnas.1633144100
- Evenson, R. J., & Simon, R. W. (2005). Clarifying the relationship between parenthood and depression. *Journal of Health and Social Behavior*, 46, 341–358. doi:10.1177/002214650504600403
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218–226. doi:10.1037//0003-066X.56.3.218
- Hirsch, R. L. (1992). *National Survey of Lawyers' Career Satisfaction, Wave I, 1984, and Wave II, 1990*. Ann Arbor, MI: ICPSR.
- Hoffenaar, P. J., van Balen, F., & Hermans, J. (2010). The impact of having a baby on the level and content of women's well-being. *Social Indicators Research*, 97, 279–295. doi:10.1007/s11205-009-9503-0
- Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, 3, 219–233. doi:10.1080/17439760802303044
- Kenrick, D. T., Griskevicius, V., Neuberg, S. L., & Schaller, M. (2010). Renovating the pyramid of needs: Contemporary extensions built upon ancient foundations. *Perspectives on Psychological Science*, 5, 292–314. doi:10.1177/1745691610369469
- Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82, 1007–1022. doi:10.1037/0022-3514.82.6.1007
- Kohler, H. P., Behrman, J. R., & Skytthe, A. (2005). Partner + children = happiness? The effects of partnerships and fertility on well-being. *Population and Development Review*, 31, 407–445. doi:10.1111/j.1728-4457.2005.00078.x

- Lucas, R. E., & Donnellan, M. B. (2007). How stable is happiness? Using the STARTS model to estimate the stability of life satisfaction. *Journal of Research in Personality, 41*, 1091–1098. doi:10.1016/j.jrp.2006.11.005
- Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology, 102*, 592–615. doi:10.1037/a0025948
- Luhmann, M., Lucas, R. E., Eid, M., & Diener, E. (2013). The prospective effect of life satisfaction on life events. *Social Psychological and Personality Science, 4*, 39–45. doi:10.1177/1948550612440105
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*, 803–855. doi:10.1037/0033-2909.131.6.803
- McLanahan, S., & Adams, J. (1987). Parenthood and psychological well-being. *Annual Review of Sociology, 13*, 237–257. doi:10.1146/annurev.so.13.080187.001321
- Nelson, S. K., Kushlev, K., English, T., Dunn, E. W., & Lyubomirsky, S. (2013). In defense of parenthood: Children are associated with more joy than misery. *Psychological Science, 24*, 3–10. doi:10.1177/0956797612447798
- Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less well-being? *Psychological Bulletin, 140*, 846–895. doi:10.1037/a0035444
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069–1081. doi:10.1037/0022-3514.57.6.1069
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727. doi:10.1037/0022-3514.69.4.719
- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies, 9*, 13–39. doi:10.1007/s10902-006-9019-0
- Stutzer, A., & Frey, B. S. (2006). Does marriage make people happy, or do happy people get married? *The Journal of Socio-Economics, 35*, 326–347. doi:10.1016/j.socec.2005.11.043
- Twenge, J. M., Campbell, W. K., & Foster, C. A. (2003). Parenthood and marital satisfaction: A meta-analytic review. *Journal of Marriage and Family, 65*, 574–583. doi:10.1111/j.1741-3737.2003.00574.x
- Umberson, D., & Williams, K. (1999). Family status and mental health. In C. S. Aneshensel & J. C. Phelan (Eds.), *Handbook of the sociology of mental health* (pp. 225–253). New York, NY: Kluwer Academic/Plenum Press.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*, 678–691. doi:10.1037/0022-3514.64.4.678
- White, M. P., & Dolan, P. (2009). Accounting for the richness of daily activities. *Psychological Science, 20*, 1000–1008. doi:10.1111/j.1467-9280.2009.02392.x