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Research Article

Satisfaction with life as an antecedent of fertility: Partner + Happiness = Children?

Nick Parr

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Research Article

Satisfaction with life as an antecedent of fertility: Partner + Happiness = Children?

Nick Parr[1]

Abstract

This paper examines the relationships between satisfaction with life in general, particular domains of life, the partner, and parental relationships with existing children, and subsequent fertility. The data are from 2,948 women and 2,622 men aged 15 to 44 years, from a longitudinal survey of the household population in Australia. For both sexes, a strong positive relationship between prior satisfaction with life and fertility two years later is found. Men's satisfaction with their partner and with their partner's relationship with existing children are positively related to fertility. Fertility is also related to age, parity, marital status, education, employment and birthplace.

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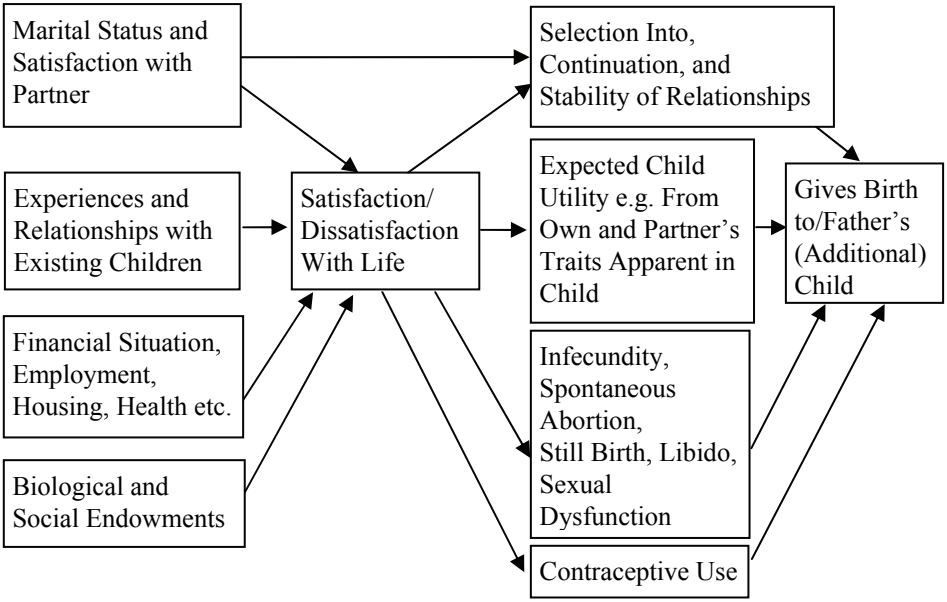
1. Overview

Are people who are more satisfied ("happier") with life more likely to have children? And are people who are happier with their partners more likely to have children? The literature on the interrelationship between fertility and an individual's ordinal level of satisfaction with life (often termed subjective wellbeing) has tended to focus on the effect of having additional children on satisfaction with life (McLanahan and Adams 1987, 1989; Evenson and Simon 2005; Kohler et al. 2005). Except for Perelli-Harris (2006), the possibility of higher levels of satisfaction with life among parents having preceded the arrival of the children appears to have been overlooked.

There is a range of theoretical reasons to expect those with higher levels of satisfaction with life to have higher fertility. First, the presence of a partner contributes to a person's satisfaction with life, and also, obviously, would affect fertility (Evans and Kelley 2004; Zimmermann and Easterlin 2006; Carmichael and Whittaker 2007a, b). A person's satisfaction with their partner would affect their satisfaction with life, and would affect their fertility through enhancing the stability and the likelihood of continuation of the union. Third, parents generally aspire to have happy children. If prospective parents are happy with life this may increase the likelihood that their children will be so, due to parent-to-child transmission of biological or social endowments. A perceived prospect of happier children in turn may heighten the fertility desire (Easterlin 2006). Furthermore, since a child will to some extent be in the image of his or her parents, adults who have a more positive view of themselves and of their partner may be more favourably disposed to their prospective offspring. Among those who have already had children, the satisfaction derived from those children will also have contributed to the overall level of satisfaction with life (Kohler et al. 2005). Parental experiences with existing children and the satisfaction they derive from these experiences differ widely and may affect parents' desire for additional children (Newman 2008). Finally, depression and stress have been found to contribute to (as well as result from) reduced fecundity, and hence would contribute to reduced subsequent fertility (Abbey et al. 1992; Phillips and Slaughter 2000; Arck et al. 2001; Wisborg et al. 2008; Zemishlany and Weizman 2008). Figure 1 presents a diagrammatic representation of these relationships.

This study uses longitudinal data to assess the relationship between prior satisfaction with life and subsequent fertility. Since satisfaction with life may arise due to satisfaction with one or more a range of different aspects with life, including personal relationships, health, finances, employment, housing, the local community, and leisure time, the paper also assesses whether satisfaction with particular domains of life is related to subsequent fertility, after controlling for a range of demographic, socioeconomic and cultural confounding variables.

Figure 1: Theoretical links between satisfaction with life and subsequent fertility



2. Literature review

The literature provides a range of reasons to expect satisfaction with life to be an antecedent of fertility both for men and for women. Principal among these is that there are both empirical and theoretical grounds for expecting satisfaction levels to be both a consequence and a determinant of the formation, continuation, stability of, and satisfaction with unions, and thus to be related to fertility. Even though the fertility of the unmarried has risen markedly in Australia since the 1970s, the married still have considerably higher rates of fertility (Carmichael and McDonald 2003; ABS 2008). Entering and remaining in a registered marriage has also been found to be associated with an increased level of satisfaction with life over the long run, as well as a temporary "honeymoon period" increase (Evans and Kelley 2004; Zimmermann and Easterlin 2006). As well as satisfaction with life being a consequence of partnership, it is also possible that some of this association is due to selection of individuals into unions on the basis of the presence of desirable psychological traits (or absence of undesirable

traits). Fowler and Christakis (2008) have shown the happiness of one spouse tends to affect the happiness of the other. This may make the happier more desirable as partners.

Fertility within unions and the continuation of unions may also be related to satisfaction with the partner and with life more generally. For example, Carmichael and Whittaker (2007a, b) document examples of men and women who were childless because they had never viewed their relationships as being with "the right person" or had become unhappy with relationships and who believed that having children would make it more difficult to search for a more satisfying relationship. The discontinuation of some unions may be due to the impairment of the relationship by one of the partners' depression, anxiety or other personality traits (Kiernan 1986; Zimmermann and Easterlin 2006; Zemishlany and Weizman 2008).

A second reason that satisfaction with life may be an antecedent of fertility is that adults with differing levels of satisfaction with life may perceive the prospect of (additional) children differently; there may be "image of self" and "image of partner" effects. According to Billari and Kohler (2009), the additional happiness which parents anticipate would result from their having (additional) children is a key driver of childbearing decisions. I hypothesize on theoretical grounds that such "predicted happiness from childbearing" would be related to the current levels of satisfaction with life and satisfaction with the partner. The literature suggests that a person's satisfaction with life reflects biological, personality and social endowments from their parents (Kohler et al. 2005; Easterlin 2006). Thus happier, better-adjusted adults might reasonably anticipate having happier, better-adjusted (and hence more desirable) children. Moreover, since a person's level of satisfaction with life may be partly attributable to their satisfaction with their own personality and physical characteristics and with those of their partner, and since a child is likely to resemble (to some degree) his or her parents, the highly satisfied (or highly satisfied with partner) face the prospect of children with characteristics they might expect to find highly satisfying, whilst the less satisfied face the prospect of children with characteristics they might expect to find less satisfying.

The theoretical model of the relationships between satisfaction with life and subsequent fertility differs between first and subsequent births. This is because for those who have already had children, the expected happiness from having additional children (and hence fertility) may be affected by their own and their partner's experiences and relationships with their existing children. For example, Newman (2008) describes examples of women and men whose positive parenting experiences had contributed to their desires to have another child, as well as others who had been deterred from doing so by negative experiences. The mother's relationship with the children may be a more important determinant of subsequent fertility than the father's, because in Australia the

additional time spent on the domestic work and parental childcare which results from children is borne mostly by the mother (Craig and Bittman 2004; Craig 2005).

As well as providing reasons to expect the more satisfied to have higher fertility, the literature also provides other reasons which might lead one to expect lower fertility among the more satisfied. According to Ramu (1984) and Carmichael and Whittaker (2007a) aversion to lifestyle change is one of the main types of justification the voluntarily childless cite for their remaining childless. If it may be presumed that those who do not wish to change their lifestyle tend to express high existing levels of satisfaction with life, then such high levels of subjective wellbeing might be expected to be associated with lower fertility (Ramu 1984). A second factor tending to produce a negative relationship between satisfaction and subsequent fertility is the experience of infant or child deaths, which would reduce satisfaction with life and may also lead to "replacement" fertility (Olsen 1980).

The well-established relationships between lower levels of satisfaction with life and infecundity or reduced fecundity provide a third set of reasons for expecting lower satisfaction with life to be an antecedent of lower fertility. Depression and antidepressant medications have been found to be causes of sexual dysfunction, reduced libido, and impaired interpersonal relationships (Phillips and Slaughter 2000; Zemishlany and Weizman 2008). Stress has also been identified as a trigger for spontaneous abortions and still births (Arck et al. 2001; Wisborg et al. 2008). This said, the interrelationship between infecundity and satisfaction with life is complex. In addition to being a determinant of fertility, infecundity has also been found to negatively affect life satisfaction, with this relationship being stronger among women who are not employed than among women who are employed (Bongaarts and Potter 1983; Abbey et al. 1992; McQuillan et al. 2007). However, where the birth of a child followed assisted reproduction, reduced parenting stress, more positive parent-child relationships, and a higher satisfaction with life have been found (Hahn 2001; McQuillan et al. 2007).

Contraceptive use is another proximate determinant which may also be related to psychological wellbeing. Increased rates of discontinuation of use of contraceptive injections and implants have been found among women with pre-initiation of use depressive symptoms, although this may be the due to their generally lower levels of satisfaction with their relationships (Westhoff et al. 1998 a, b). Moreover, fears that use of hormonal methods may affect mood may deter women from adopting these methods, and the depressive individual may be particularly sensitive to such fears.

In addition to the previously discussed satisfaction with the partner and satisfaction with relationships with any existing children, satisfaction may also arise from a range of other domains of life, including finances, employment, housing, health, the local community, and leisure time (Easterlin 2006; Fowler and Christakis 2008). Whilst the

literature provides numerous theoretical reasons to expect relationships between satisfaction with particular domains of life and fertility, there appears to be a dearth of studies which investigate such relationships empirically. Satisfaction with one's financial situation may be important, since the reasons given by Australians for not having more children are often financial (Weston et al. 2004). Employment opportunities may be a consideration, since pregnancy and children may diminish opportunities to take advantage of them, particularly for women (Parr 2005). A person's health has been found to be related both to their satisfaction with life and to fertility. Ryff et al. (2006) have shown that a person's weight and waist-hip ratio have significant negative associations with their psychological well-being, and that a range of other biomarkers also indicates that higher psychological well-being is associated with a lower biological risk of ill health. Obese and overweight men have also been found to have reduced fecundity (Sallmén et al. 2006), and it is plausible the biomarkers Ryff et al. (2006) describe may also be related to the selection of individuals into unions, the continuation of unions, and fertility desires among those within unions. The home in which a person lives may also have ramifications for fertility: those in unsatisfactory living conditions may delay having additional children until they can move to more satisfactory housing or may forgo having them altogether (Felson and Solaun 1975; Bernadi 2005). In Australia house size would be an issue for those contemplating additional children (Newman 2008). The move towards higher density housing in Australia's larger cities and increasingly delayed leaving of the parental home due to housing unaffordability and unavailability may thus affect fertility (Flateau et al. 2007). The prospect of moving away from a neighbourhood or local community with which one is dissatisfied may similarly lead to a postponement of some childbearing. Satisfaction with the availability of free time may also be a consideration in view of the reductions to such time use which result from additional children (Craig 2005, 2006). For example, Carmichael and Whittaker (2007a) present examples of people who rationalise their childlessness in terms of the extra free time they could enjoy without children.

Analyses of the interrelationship between satisfaction with life as a whole and with particular domains in life and subsequent fertility also need to control for a range of variables which may affect both satisfaction with life and fertility. Since marital status and other partnership variables affect both fertility and satisfaction with life, controls for these variables at the time of observation of satisfaction with life are necessary (Carmichael and McDonald 2003; Evans and Kelley 2004; Kohler et al. 2005; Zimmermann and Easterlin 2006). Socioeconomic factors also need to be controlled for, since income, being employed, and the level of education have also been shown to affect both satisfaction with life and fertility (Carmichael and McDonald 2003; Parr 2005; Carroll 2007; Headey et al. 2008). Ethnicity has also been found to be related

both to expressed satisfaction with life and to fertility (Carmichael and McDonald 2003; Parr 2005, 2006). Moreover, the effects of age need to be controlled for, in view of the documented variation in life satisfaction with age and the variation in fertility with age (Easterlin 2006; ABS 2008).

This paper analyses the fertility of Australian women and men, paying particular attention to whether women and men who are more highly satisfied with life are more likely to subsequently have children. The relationship between satisfaction with life and fertility measured at the same point of time will be affected both by the processes through which past levels of satisfaction may have affected fertility and by the effects of the children on satisfaction with life (Kohler et al. 2005). However, the longitudinal structure of the data used allows the levels of satisfaction to be related to fertility at later points in time, thereby ensuring the observations of explanatory satisfaction-related variables cannot have been affected by the fertility response variable (i.e. reverse causality). In this respect the analysis differs from the overwhelming majority of the existing literature on the interrelationships between life satisfaction and fertility. The relationships with subsequent fertility of satisfaction with a range of particular domains in life, including the relationships with the partner and any existing children, the financial situation, employment, housing, health and free time, and with a range of demographic, socioeconomic and cultural variables are also assessed.

3. Data and methods

The data used are from the Household, Income and Labour Dynamics in Australia Survey (HILDA). Wave 1 of this nationwide, longitudinal survey was conducted in 2001, and subsequent waves on an annual basis. The sample design employed a multi-stage cluster sample of households. Remote areas of the country were not sampled (Watson and Wooden 2002a, b).

Wave 5 collected a wide range of data on fertility. From data on the children a respondent had ever had, including co-resident children, non-resident children, and deceased children, a binary variable on whether or not the respondent had given birth to or fathered a child in the 12 months prior to the Wave 5 interview was constructed. Satisfaction with life was measured by responses on a 0 to 10 scale to the question "All things considered, how satisfied are you with your life?", with higher values indicating greater satisfaction. In view of the roughly two-year interval between Wave 3 and with Wave 5, the measurements of satisfaction with life in Wave 3 would not have been affected either by the pregnancies for or the births of children in the 12 months before the Wave 5 interview. Similarly constructed measures of satisfaction with "the home in which you live", "your employment opportunities", "your financial situation", "how

safe you feel", "feeling part of the local community in which you live", "your health", "the neighbourhood in which you live", and "the amount of free time you have" were also considered. A similarly-scaled measurement of "satisfaction with your partner" was collected from partnered men and women using a special self-completion module of the questionnaire. For those with children, questions were also asked on satisfaction with "your relationship with your children" and "your partner's relationship with your children".

The analysis was restricted to 2,948 women and 2,622 men who were aged 15 to 44 years last birthday one year before the Wave 5 interview and for whom a measurement of satisfaction with life was available from Wave 3. Separate analyses were performed for women and men in order to assess whether the interrelationships of fertility and satisfaction with life differed significantly between the sexes. The analyses incorporating measures of satisfaction with the partner were conducted on 1,290 married or cohabiting women and 1,084 married or cohabiting men. Additional analyses incorporating measures of the respondent's satisfaction with their relationship with their children, and their satisfaction with their partner's relationship with their children, were conducted on 857 women and 700 men who were either married or cohabiting, and who had at least one child. Since the response variable was binary, logistic regression was used. For reasons provided in the introduction, control variables include those for marital status, age, parity, education, income, employment, and birthplace.

4. Results

4.1 Variation in satisfaction with life

In general Australian women and men aged 15-44 report high levels of satisfaction with life (Headey and Wooden 2004). The mean score for women (7.93) was slightly above that for men (7.84). For each sex the modal value was 8 out of 10. Moreover, for each sex only 2.6 per cent rated their satisfaction with life below the scale's natural mid-point of 5 (Table 1).

Table 1 shows the variation in the mean level of satisfaction with life by background variables. For both sexes those who are divorced, separated or widowed stand out as being less satisfied with life than those who are married and those who are cohabiting. They are also less satisfied than those who have never married and who are not currently cohabiting. Men with three or more children also have a relatively low satisfaction with life, but differences between other parities are slight. For both sexes the 15 to 19 years olds are more highly satisfied with life than those at older ages.

Those who are not employed have a lower mean satisfaction with life than those who are in employment, with the difference being slightly greater for men than for women. Both for men and for women the variations in satisfaction by highest level of education and by annual income are slight. Migrants tend to express lower levels of satisfaction with life than the Australia-born, with the difference from the Australia-born being somewhat wider for men born in Europe and for men in the "Other Overseas" birthplace category.

Table 1: Mean scores for satisfaction with life for men and women aged 15-44 by background variables

Variable	Women		Men	
	Mean Life Satisfaction	n	Mean Life Satisfaction	n
Marital Status				
Married	8.1	1,278	8.0	983
Cohabiting	8.0	413	7.8	354
Divorced, Separated or Widowed	7.3	283	7.3	173
Never Married and Not Cohabiting	7.9	974	7.8	1,112
Parity				
0	8.0	1,355	7.9	1,513
1	7.9	403	7.9	326
2	7.8	666	7.8	466
3+	8.0	524	7.7	317
Age at Start of Year				
15 to 19	8.2	374	8.4	363
20 to 24	8.0	421	7.8	392
25 to 29	7.9	403	7.8	358
30 to 34	7.9	519	7.8	456
35 to 39	7.9	583	7.7	500
40 to 44	7.8	648	7.7	553
Highest Level of Education				
Bachelors or Higher	7.9	677	7.8	476
Year 12	7.9	929	7.7	784
Below Year 12	8.0	1,342	7.9	1,362
Total Annual Income				
Above 100,000	8.0	304	7.8	1,173
45,000-99,999	7.8	779	7.7	500
10,000-44,999	7.8	842	7.9	324
Below 10,000	8.1	726	8.1	380
Employment Status				
Employed	8.0	1,978	7.9	2,198
Not Employed	7.8	970	7.6	424

Table 1: (Continued)

Variable	Women		Men	
	Mean Life Satisfaction	n	Mean Life Satisfaction	n
Birthplace				
Australia	8.0	2,434	7.9	2,188
MES Overseas[a]	7.8	190	7.7	201
Europe[b]	7.9	77	7.6	46
Asia[c]	7.8	171	7.8	102
Other Overseas	7.9	76	7.6	85
All	7.9	2,948	7.8	2,622

Source: HILDA Survey Combined Wave1-Wave 5 Data

a. Main English-Speaking overseas i.e. Canada, Ireland, New Zealand, South Africa, United Kingdom, United States Falkland Islands, British and New Zealand Antarctic Territories.

b. Excludes Ireland and United Kingdom. and includes French and Norwegian Antarctic Territories.

c. Excludes Middle East.

d. Calculated from Wave 5 data for time point two years before Wave 5 interview (the recording of fertility in Wave 5 is more complete).

4.2 The effects of satisfaction with life and other variables on fertility

4.7 per cent of women in the 15 to 44 age range gave birth to a child in the year before their Wave 5 interview (Table 2). There is significant variation in fertility by the level of satisfaction with life expressed roughly two years earlier, with generally higher levels of fertility being associated with higher preceding levels of satisfaction with life. None of the 78 women whose life satisfaction was below the scale's natural mid-point of 5 subsequently gave birth, whilst the percentages giving birth among women who rated their satisfaction with life at 9 or 10 are 51 per cent and 24 per cent respectively above the average for all women aged 15 to 44 years. Table 2 also shows the variation in the percentage of women who gave birth by marital status, parity, age, level of education, income, employment status and ethnicity as recorded at Wave 3.

The percentage of men who fathered a child born in this year also is 4.7 per cent. The relationship between satisfaction with life and subsequent fertility is even stronger for men than that for women (Table 2). None of the 157 men who rated their satisfaction with life below 6 went on to father a child in the period one to two years later. The percentages of men who rated their satisfaction with life at 9 or 10 who subsequently fathered a child are more than 36 per cent above the average. Men's fertility rates also vary considerably by the other background variables considered (Table 2).

Table 2: Percent who gave birth to or fathered a child in 12 months before wave 5 interview by satisfaction with life and background variables measured approximately two years earlier

Variable	%women who gave birth	n	% men who fathered child	n
Satisfaction With Life				
0 to 4	0.0	78	0.0	68
5	5.5	109	0.0	89
6	0.6	161	4.1	196
7	3.8	579	3.5	550
8	3.9	941	4.9	865
9	7.1	736	6.4	578
10	5.8	344	6.5	276
Marital Status				
Married	6.6	1,278	8.0	983
Cohabiting	7.3	413	6.8	354
Divorced, Separated or Widowed	2.8	283	4.6	173
Never Married and Not Cohabiting	1.6	974	1.3	1,112
Parity[d]				
0	4.1	1,355	3.4	1,513
1	13.2	403	14.4	326
2	2.7	666	3.4	466
3+	2.1	524	2.9	317
Age at Start of Year				
15 to 19	2.1	374	0.1	363
20 to 24	4.0	421	2.8	392
25 to 29	10.9	403	8.9	358
30 to 34	8.3	519	9.2	456
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Highest level of Education				
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b. Excludes Ireland and United Kingdom. and includes French and Norwegian Antarctic Territories.

c. Excludes Middle East.

d. Calculated from Wave 5 data for time point two years before Wave 5 interview (the recording of fertility in Wave 5 is more complete).

Both for women and for men, the effect of satisfaction with life is positive and significant at the 5% level, even after controlling for a range of demographic, socioeconomic and cultural variables (Model 1 in Table 3 and Model 1 in Table 4). The size of the effect of satisfaction with life on fertility is slightly greater for men than for women, but not significantly so. The possibility of a nonlinear effect was tested for by consideration of a squared term but found to be insignificant. Model 2 (Table 3 and Table 4), which includes interaction effects between satisfaction with life and whether the respondent was in a married or cohabiting union, shows the strength of the effect of satisfaction with life on fertility was stronger among the partnered, and significantly so for women. Interaction effects with parity were also considered. However the differences in the strength of the effects of satisfaction with life by parity were not significant.

Model 3 (Tables 3 and 4) attempts to unpack the effects of satisfaction with life for the full samples of women and for men by testing for the effects of eight domains of life. However for both sexes and for each of these domains the effect of satisfaction with that domain of life was small and not statistically significant. Even when the variables representing satisfaction with domains of life are entered singly, as opposed to in combination, their effects are insignificant after the other variables in the model are controlled for.

Model 4 (Tables 3 and 4), which for married or cohabiting men and women only also considers the effects of the level of satisfaction with the partner, shows that for men higher levels of satisfaction with the partner are significantly associated with higher subsequent fertility. The introduction of the satisfaction with the partner variable reduces the size of the coefficient for satisfaction with life (by roughly one-third) and raises its p-value to 0.17. For women the coefficient for the level of satisfaction with the partner is positive, but small and not statistically significant. The effect of satisfaction with life remains significant.

Table 3: Logistic regressions of whether a woman gave birth to a child in 12 months before wave 5 interview

	Model 1(All Women Aged 15-44, N = 2,948)		Model 2 (All Women Aged 15-44, N = 2,948)		Model 3 (All Women Aged 15-44, N = 2,948)	
Variable	**β**	**S. E. (β)**	**β**	**S. E. (β)**	**β**	**S. E. (β)**
Satisfaction With Life	0.20**	0.08	-0.07	0.15	0.28**	0.12
Interaction Satisfaction with Life & Being in a Married/Cohabiting Partnership			0.37**	0.18		
Satisfaction with Partner						
Satisfaction with Relationship with Children						
Satisfaction with Partner's Relationship with Children						
Satisfaction with Home					0.01	0.06
Satisfaction with Employment Opportunities					-0.02	0.05
Satisfaction with Financial Situation					-0.04	0.06
Satisfaction with Safety					0.02	0.08
Satisfaction with Local Community					-0.04	0.06
Satisfaction with Health					0.00	0.07
Satisfaction with Neighbourhood					-0.01	0.07
Satisfaction with Free Time					0.01	0.05
Marital Status						
Married	0.00		0.00		0.00	
Cohabiting	-0.53*	0.27	-0.53	1.45	-0.61**	0.28
Divorced, Separated or Widowed	-0.17	0.40	2.69*[f]	1.42	-0.16	0.42
Never Married and Not Cohabiting	-2.18***		0.75[f]	1.45	-2.20***	0.42
Parity						
0	-0.89***	0.27	-0.89***	0.27	-0.95***	0.27
1	0.00		0.00		0.00	
2	-1.52***	0.32	-1.54***	0.32	-1.66***	0.34
3+	-1.56***	0.39	-1.58***	0.39	-1.99***	0.47
Age[e]						
15 to 19	2.18**	0.92	2.31**	0.92	2.46**	1.01
20 to 24	2.70***	0.69	2.71***	0.69	2.80***	0.81
25 to 29	3.12***	0.63	3.12***	0.63	3.30***	0.75
30 to 34	2.63***	0.62	2.62***	0.62	2.91***	0.74
35 to 39	1.84***	0.63	1.84***	0.63	2.22***	0.75
40 to 44	0.00		0.00		0.00	
Highest level of Education						
Bachelors or Higher	0.44	0.29	0.46	0.29	0.50*	0.30
Year 12	0.37	0.26	0.39	0.26	0.40	0.27
Below Year 12	0.00		0.00		0.00	
Income[d]	0.02	0.01	0.02	0.01	0.02	0.02
Not Employed	0.56**	0.24	0.55**	0.24	0.55**	0.26
Birthplace						
Australia	0.00		0.00		0.00	
MES Overseas[a]	-0.34	0.45	-0.34	0.45	-0.38	0.46
Europe[b]	-0.51	0.75	-0.49	0.75	-1.28	1.05
Asia[c]	-1.31**	0.62	-1.31**	0.62	-1.19**	0.62
Other Overseas	0.04	0.56	0.06	0.57	-0.34	0.65
Constant	-6.09***	0.95	-6.89***	1.06	-6.33***	1.11
-2 Log Likelihood	783.0		779.0		718.0	

Table 3: (Continued)

	Model 4 (Married or Cohabiting Women Aged 15-44, N= 1,290)		Model 5 (Married or Cohabiting Women Aged 15-44 with Children, N = 857)	
Variable	**β**	**S. E. (β)**	**β**	**S. E. (β)**
Satisfaction With Life	0.39**	0.16	0.47**	0.22
Interaction Satisfaction with Life & Being in a Married/ Cohabiting Partnership				
Satisfaction with Partner	0.03	0.09	0.01	0.15
Satisfaction with Relationship with Children			0.05	0.20
Satisfaction with Partner's Relationship with Children			-0.01	0.17
Satisfaction with Home	0.03	0.07	0.08	0.10
Satisfaction with Employment Opportunities	-0.03	0.06	0.09	0.08
Satisfaction with Financial Situation	-0.03	0.07	-0.21*	0.10
Satisfaction with Safety	0.02	0.10	0.10	0.15
Satisfaction with Local Community	-0.02	0.09	-0.01	0.10
Satisfaction with Health	-0.02	0.09	0.00	0.11
Satisfaction with Neighbourhood	0.01	0.09	-0.09	0.12
Satisfaction with Free Time	-0.01	0.05	0.02	0.07
Marital Status				
Married	0.00		0.00	
Cohabiting	-0.70**	0.31	-0.37	0.49
Divorced, Separated or Widowed	N.A.		N.A	
Never Married and Not Cohabiting	N.A.		N.A	
Parity				
0	-0.94***	0.31	N.A	
1	0.00		0.00	
2	-1.71***	0.38	-1.60***	0.43
3+	-2.47***	0.64	-2.11***	0.698
Age[e]				
15 to 19	4.31***	1.34	3.43***[g]	1.23
20 to 24	2.99***	1.11	3.43***[g]	1.23
25 to 29	3.53***	1.04	3.84***	1.08
30 to 34	3.39***	1.03	2.71**	1.06
35 to 39	2.67**	1.04	1.95*	1.08
40 to 44	0.00		0.00	
Highest level of Education				
Bachelors or Higher	0.62*	0.35	1.39***	0.49
Year 12	0.62*	0.33	0.90*	0.45
Below Year 12	0.00		0.00	
Income[d]	0.02	0.02	0.00	0.03
Not Employed	0.57*	0.30	0.62	0.38
Birthplace				
Australia	0.00		0.00	
MES Overseas[a]	-0.22	0.49	-0.35	0.70
Europe[b]	-0.94	1.07	-18.13	7308
Asia[c]	-1.54**	0.76	-1.89*	1.09
Other Overseas	0.05	0.70	0.87	0.76
Constant	-7.66***	1.49	-9.29***	2.20
-2 Log Likelihood	518.0		251.7	

Notes for Table 3, see next page.:

Table 3 Notes:
Survey Combined Wave1-Wave 5 Data
a. Main English-Speaking overseas i.e. Canada, Ireland, New Zealand, South Africa, United Kingdom, United States, Falkland Islands, British and New Zealand Antarctic Territories.
b. Excludes Ireland and United Kingdom. Includes French and Norwegian Antarctic Territories.
c. Excludes Middle East.
d. Measured in A$10,000.
e. As at start of 12 months before Wave 5 interview.
f. The values of the coefficients of these variables in Model 2 are to be interpreted as extrapolations to the modelled levels when satisfaction with life is zero.
g. 15 to 19 and 20 to 24 merged because of small numbers in 15 to 19
*** $p < 0.01$, ** $0.01 \leq p < 0.05$, * $0.05 \leq p < 0.01$

Among partnered men with one or more children, it is the level of satisfaction with the partner's relationship with the children, as opposed to the relationship with the partner per se, which is the significant factor affecting fertility (Model 5 in Table 4). The coefficient for satisfaction with life remains positive and of similar magnitude after the introduction of these variables, but has a reduced level of significance. For partnered women with children neither the level of satisfaction with their own relationship with children nor their level of satisfaction with their partner's relationship with the children has a significant effect (Model 5 in Table 3). For women the effect of satisfaction with life remains significant after controlling for the satisfaction with their own and their partner's relationship with the children. For partnered women with children, the level of satisfaction with the financial situation has a significant negative relationship to subsequent fertility. This may reflect the budgetary constraints on having extra children being more readily apparent to those with children than to those without children.

The effects of the demographic variables are broadly similar both for women and for men. There are significant effects for parity for both sexes, with those with one child being the most likely to have another child in the period roughly one-to-two years later, followed by those with no children. This reflects two children continuing to be the most common family size in Australia (Kippen 2004; Parr 2007). Not surprisingly, for each sex, those who were never married and not cohabiting have significantly lower fertility than the currently married (Tables 3 and 4). Women and men who were cohabiting but not married also have significantly lower fertility than the married. Whilst the mean levels of fertility of the formerly partnered are below average, they are far from zero (Table 2). This reflects a pattern of the repartnering being relatively likely to produce children early in the union with their new partner. The small sizes of the coefficients for the formerly partnered females in Tables 3 and 4 reflect unmeasured differences in the effects of parity and income between the formerly partnered and the currently married, which would stem from the existing children being from a previous union (Vikat et al. 1999; Vikat et al. 2004). Controlling for the lower levels of satisfaction of the formerly

partnered also contributes to the reduction of the size of the coefficient for females. For both sexes the effects of age resemble an inverted U-shape, with the peak in the 25 to 29 age group (Tables 3 and 4). However the contrast between the coefficients for 25 to 34 year olds and the baseline 40 to 44 year old group is significantly smaller for males than for females.

According to the HILDA data, for both sexes the more highly educated have higher fertility (Table 2). Some of this correlation would be due to the non-sampling of the remote areas, where fertility is high and education relatively low. However, this is unlikely to be of major importance, because such areas account for only a small percentage of the total population. Whilst an association between higher levels of education and higher fertility among men is expected to have been long established, the pattern of higher fertility among more highly educated women appears to contrast with the past pattern for Australia of the more highly educated having lower fertility (Carmichael and McDonald 2003; Parr 2005, 2009). For men, having a Bachelors degree is associated with significantly higher fertility, even after controlling for a range of other variables (Table 4), whereas for women the effect is significantly smaller and is not significantly different from zero, after a range of possible confounding factors is controlled for. Thus the higher fertility of the more highly educated women shown in Table 2 would appear to be largely an artefact of their being more likely to be partnered (another recent departure from the patterns of the past) and to a greater recuperation of previously postponed births (a "tempo effect") among the more educated (Heard 2008). The latter in turn may be linked to the generally earlier progression of the more highly educated women through the sequence of changes in partnership and family formation which has been termed the "Second Demographic Transition" (Lesthaeghe 1995; Van de Kaa 1997; Carmichael 1998). That, even after introducing these controls, the fertility of more educated women is not significantly lower than that of less educated may reflect the generally greater improvement in access to paid maternity leave, childcare and other family-friendly working conditions of the more educated. The gaining of traction of a view that such measures may be valuable in recruiting and retaining highly-skilled female staff may have indirectly contributed to this (Waldfogel et al. 1999; Carmichael and McDonald 2003; Baird 2005; Parr 2005; ABS 2006; Broderick 2008).

Table 4: Logistic regressions of whether a man fathered a child in 12 months before wave 5 interview

	Model 1 (All Men Aged 15-44, N=2,622)		Model 2 (All Men Aged 15-44, N=2,622)		Model 3 (All Men Aged 15-44, N = 2,622)	
Variable	**β**	**S. E. (β)**	**B**	**S. E. (β)**	**β**	**S. E. (β)**
Satisfaction With Life	0.24***	0.09	0.20	0.18	0.35***	0.11
Interaction Satisfaction with Life & Being in a Married/Cohabiting Partnership			0.05	0.21		
Satisfaction with Partner						
Satisfaction with Relationship with Children						
Satisfaction with Partner's Relationship with Children						
Satisfaction with Home					-0.08	0.06
Satisfaction with Employment Opportunities					-0.06	0.06
Satisfaction with Financial Situation					0.00	0.06
Satisfaction with Safety					0.07	0.09
Satisfaction with Local Community					-0.01	0.06
Satisfaction with Health					0.06	0.08
Satisfaction with Neighbourhood					-0.10	0.07
Satisfaction with Free Time					-0.05	0.05
Marital Status						
Married	0.00		0.00		0.00	
Cohabiting	-0.79*	0.29	-0.79	0.29	-0.85***	0.30
Divorced, Separated or Widowed	0.07	0.41	0.43[f]	1.71	0.06	0.41
Never Married and Not Cohabiting	-2.25***	0.41	-1.89[f]	1.71	-2.18***	0.41
Parity						
0	-0.79***	0.26	-0.79***	0.26	-0.70***	0.26
1	0.00*		0.00		0.00	
2	-1.40***	0.33	-1.40	0.33	-1.35***	0.33
3+	-1.56***	0.44	-1.56***	0.44	-1.50***	0.44
Age[e]						
15 to 19	0.47	0.90	0.50	0.90	0.45	0.90
20 to 24	1.30**	0.54	1.30**	0.53	1.15**	0.54
25 to 29	1.63***++	0.42	1.63***++	0.42	1.48***+	0.43
30 to 34	1.34***+	0.38	1.34***+	0.38	1.28***++	0.39
35 to 39	0.88**	0.39	0.88**	0.39	0.87**+	0.40
40 to 44	0.00		0.00		0.00	
Highest Level of Education						
Bachelors or Higher	0.94***+	0.27	0.94***+	0.27	0.93***	0.28
Year 12	0.32	0.27	0.32	0.27	0.38	0.27
Below Year 12	0.00		0.00		0.00	
Income[d]	-0.02++	0.01	-0.02++	0.01	-0.02+	0.01
Not Employed	-0.14	0.44	-0.14	0.44	-0.30	0.49
Birthplace						
Australia	0.00		0.00		0.00	
MES Overseas[a]	0.01	0.35	0.01	0.35	0.08	0.35
Europe[b]	-0.78	1.07	-0.78	1.07	-0.85	1.08
Asia[c]	-1.19	0.75	-1.18	0.75	-1.09	0.75
Other Overseas	0.62	0.45	0.62	0.45	0.68	0.46
Constant	-4.55***	0.85	-4.64***	0.95	-4.35***+	0.94
-2 Log Likelihood	744.7		744.6		725.6	

Table 4: (Continued)

	Model 4 (Married or Cohabiting Men Aged 15-44, N= 1,084)		Model 5 (Married or Cohabiting Men Aged 15-44 with Children, N= 700)	
Variable	**B**	**S. E. (β)**	**β**	**S. E. (β)**
Satisfaction With Life	0.21	0.15	0.20	0.21
Interaction Satisfaction with Life & Being in a Married/Cohabiting Partnership				
Satisfaction with Partner	0.22**	0.10	0.06	0.17
Satisfaction with Relationship with Children			0.02	0.23
Satisfaction with Partner's Relationship with Children			0.51*+	0.26
Satisfaction with Home	-0.08	0.08	-0.16+	0.11
Satisfaction with Employment Opportunities	-0.07	0.07	-0.05	0.10
Satisfaction with Financial Situation	0.02	0.08	-0.06	0.11
Satisfaction with Safety	0.08	0.11	0.20	0.15
Satisfaction with Local Community	-0.04	0.07	-0.09	0.10
Satisfaction with Health	0.11	0.10	0.13	0.14
Satisfaction with Neighbourhood	-0.06	0.09	-0.08	0.13
Satisfaction with Free Time	-0.02	0.06	-0.05	0.08
Marital Status				
Married	0.00		0.00	
Cohabiting	-0.89***	0.34	-0.68	0.53
Divorced, Separated or Widowed	N.A.		N.A.	
Never Married and Not Cohabiting	N.A.		N.A.	
Parity				
0	-0.90***	0.30	N.A.	
1	0.00		0.00	
2	-1.42***	0.39	-1.58***	0.45
3+	-1.80	0.57	-1.88***	0.65
Age[e]				
15 to 19	1.52**[j]	0.66	0.09[g++]	1.03
20 to 24	1.52**[j]	0.66	0.09[g++]	1.03
25 to 29	1.65***	0.50	1.72***+	0.63
30 to 34	1.11**++	0.46	0.24++	0.58
35 to 39	0.69+	0.49	0.55	0.56
40 to 44	0.00		0.00	
Highest Level of Education				
Bachelors or Higher	1.27***	0.34	1.81***	0.51
Year 12	0.65*	0.33	1.17**	0.46
Below Year 12	0.00		0.00	
Income[d]	-0.02++	0.02	-0.06**+	0.03
Not Employed	0.58	0.57	0.85	0.80
Birthplace				
Australia	0.00		0.00	
MES Overseas[a]	0.11	0.42	-0.68	0.81
Europe[b]	-18.64	8437	-19.00	9785
Asia[c]	-1.56	1.05	-1.21	1.12
Other Overseas	0.45	0.63	1.40*	0.76
Constant	-6.09***	1.32	-8.49***	2.27
-2 Log Likelihood	467.4		231.4	

Notes for Table 4, see next page

Table 4 Notes:
Source: HILDA Survey Combined Wave1-Wave 5 Data
a. Main English-Speaking overseas i.e. Canada, Ireland, New Zealand, South Africa, United Kingdom, United States, Falkland Islands, British and New Zealand Antarctic Territories.
b. Excludes Ireland and United Kingdom. Includes French and Norwegian Antarctic Territories.
c. Excludes Middle East.
d. Measured in A$10,000.
e. As at start of 12 months before Wave 5 interview.
f. The values of the coefficients of these variables in Model 2 are to be interpreted as extrapolations to the modelled levels when satisfaction with life is zero.
g. 15 to 19 and 20 to 24 merged because of small numbers in 15 to 19.
*** $p < 0.01$, **$0.01 \leq p < 0.05$, * $0.05 \leq p < 0.01$
For significance of difference between coefficient for males and coefficient for females +++ $p < 0.01$, ++$0.01 \leq p < 0.05$, + $0.05 \leq p < 0.01$

Women who were not in paid employment at the time of Wave 3 have significantly higher fertility than those who were employed at this time, whereas for men the effect of being employed is not significant (Table 3). The lower fertility of employed women may reflect the prospective "indirect costs" (i.e. loss of income), childcare costs, and time-related pressures which they would incur through having children (Chapman et al. 2001; Breusch and Gray 2004; Craig 2006; Parr et al. 2007; Parr 2009). For both sexes the p-value of the effect of individual income on fertility is just above 0.1, except for partnered men with children. Migrants generally have lower fertility than the Australia-born, with the fertility of women who were born in Asia being significantly lower than that of their Australia-born counterparts (Table 3).

5. Conclusion

The main finding of this paper is that, both for women and for men, an increased level of satisfaction with life is followed by a significantly greater propensity to have children. The title of Kohler et al.'s 2005 paper poses the question; "partner + children = happiness?". The main finding of this paper, together with the higher fertility of the partnered, the positive interaction effect between being partnered and satisfaction with life, and the higher fertility of those who express higher levels of satisfaction with the partner would seem to support a different equation; partner + happiness = children.

Women and men who are dissatisfied with life have strikingly low fertility rates. The small number in this group in the sample used is probably an underestimate of the representation of the dissatisfied in the wider community, because the non-household population was not sampled. For those with very low satisfaction with life infecundity and reduced fecundity may add to the effects of the lower fertility desires and relationship difficulties they may experience (Abbey et al. 1992; Phillips and Slaughter

2000; Arck et al. 2001; Wisborg et al. 2008; Zemishlany and Weizman 2008). This study also finds those who are highly satisfied with life (9 or 10 out of 10) have considerably higher than average subsequent rates of fertility. According to McDonald (2002) risk aversion theory posits that men and women may refrain from having additional children, because there is a possibility that doing so may adversely affect their lives. Such risk aversion is epitomised by Ramu's (1984) summary of the justifications given by voluntarily childless Canadians for their not wanting children as "life has been very good without children: and we don't even want to find out whether it would have been better or worse without them" (see also Carmichael and Whittaker 2007a). A decline in satisfaction with life would appear to be one of the risks associated with having children, particularly since parenthood has been found to be associated with higher levels of depression among adults (Evenson and Simon 2005). Since there is little or no scope for them to raise their satisfaction with life through having additional children, and considerable scope for reduction, logic would suggest that, were they egocentric, the highly satisfied would have more reason to be averse to risks to their happiness which having (more) children may bring. However the evidence in this paper is that their behaviour is quite the opposite. That highly satisfied people are more likely to subsequently have children may point the importance of an altruistic motive for parenthood, with their biological or social endowment of future children with their traits being a higher priority than any risk that children may be detrimental to their own high pre-child sense of wellbeing. It may point to their confidence in the resilience of these high levels of satisfaction post childbirth. In view of the disproportionate representation of those with very high prior levels of satisfaction with life among those having children, "ceiling effects" may affect the assessment of pre to post child levels of satisfaction.

Some of the raw differences in fertility between people with differing levels of satisfaction with life are attributable to differences in their demographic and socioeconomic characteristics. The more highly satisfied are disproportionately found among certain groups with higher fertility. In particular they are disproportionately drawn from women and men in marital or cohabiting unions, and from men who are employed. As discussed earlier, it is plausible that there is a selection of the happier into partnerships. However it also appears likely that the higher satisfaction resulting from continuing marital or cohabiting partnerships explains part of the correlation between life satisfaction and fertility. It should be noted that not all the groups with higher levels of satisfaction with life also have high fertility. In particular, employed women and both men and women aged 15 to 19 have high levels of satisfaction with life and, also, low fertility.

Large and statistically significant effects of satisfaction with life on fertility are apparent even after controlling for an extensive range of other factors affecting fertility.

Some of this is due to the correlations of satisfaction with the partner and with the parents' relationships with existing children with both satisfaction with life and subsequent fertility. However, particularly for women, significant effects remain after controlling for these factors. It is interesting to note that the strength of the relationships between satisfaction with the partner and with the partner's relationship with existing children and subsequent fertility are noticeably stronger when reported by male partners about female partners than vice versa. This may reflect that, despite some change over time, the additional domestic work and parental childcare resulting from children continues to be undertaken disproportionately by Australian women (Craig and Bittman 2004; Craig 2005). The statistical association between satisfaction with life and fertility may, of course, also be affected by unmeasured variables, which may affect both satisfaction with life and fertility, for example unmeasured personality and attitudinal traits, and the strength of support from social networks (Ryff 1989; Bühler and Philipov 2005). For this reason, further research which can control for such variables and research focusing on qualitative aspects of men's perceptions of their partner and their partner's relationship with her children and how such perceptions affect fertility desires is needed.

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