Unlocking the black box of life satisfaction surrounding childbearing

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Abstract

This research note uses the Household Income and Labour Dynamics in Australia (HILDA) data to show how different domains of satisfaction are affected by childbearing events. Following up on existing studies, fixed effect estimation techniques show that two domains are particularly affected by childbearing, i.e. satisfaction with leisure time and the satisfaction with the partner. The effects are substantial and much larger compared to the case when overall life satisfaction is used as dependent variable. A third domain, satisfaction with health also changes significantly. Remaining domains, conversely, show little or no reaction to childbearing events.

Keywords: life satisfaction, domains of satisfaction, childbearing, longitudinal analysis

1. Introduction

With value change and modernisation (Inglehart 1971, 1989; Lesthaeghe and van de Kaa 1986) and subsequent fertility decline across the Western world (Billari and Kohler, 2004; Morgan, 2003), one natural question to ask is how parents relate their Subjective Well-Being (SWB from here onward) to the presence of children. Indeed, this line of research has blossomed in recent years. Important contributions include Angels (2010), Clark *et al*. (2008), Pollman-Schult, (2014), Margolis and Myrskylä, (2011; 2014), Frijters *et al*., (2011) and Matysiak *et al*. (2016). This literature shows that subjective well-being, whether measured in terms of life satisfaction or overall happiness, tend to increase prior to childbearing, while it declines just afterwards. This pattern of positive anticipation, and subsequent adaptation varies in intensity and duration by a set of socio-demographic characteristics - and it differs by parity. However, exactly why and how subjective wellbeing should first increase for then to decline as a result of childbearing is less obvious and certainly the current line of studies do not provide a strong theoretical underpinning.

A key shortcoming in this literature, though not often recognized, concerns the measurement of subjective wellbeing. Cognitive psychologists have long argued against the use of overall measures of subjective wellbeing for the simple reason that "Taking all things together" – which is the usual way of phrasing such questions about happiness or life satisfaction – for most people is a rather difficult mental task (Schwarz and Strack, 1991). Instead satisfaction should be measured through its domains. Such an approach immediately improves the measurement precision as individuals are better able at making judgements about satisfaction for specific domains (REFRENCE needed here). But the more fundamental benefit comes from the fact that SWB is multidimensional (Diener, 2006). Individuals will necessarily derive satisfaction from various sources, though it is not obvious which domains weigh more (or less) towards the overall SWB. The relative importance of life domains for the overall assessment of satisfaction depends on life events, values, pursued goals (Oishi et al. 1999; Kasser and Ryan, 1996), expectations (Ross et al. 1996; Veenhoven, 1996) and life stages (Cantor and Blanton, 1996), and needless to say, there is heterogeneity in how those elements matter for individuals' overall SWB (Oishi et al. 1999; Wu, 2009; Trauer and Mackinnon, 2001). Certainly, within individual's variation in domains satisfaction tends to be higher if compared to the within variation in the overall life satisfaction (Veenhoven, 1996; Diener et al. 1999).

When it comes to the existing literature on subjective wellbeing and childbearing, one may easily imagine that individuals entering parenthood react differently to the various satisfaction do-

mains. It is certainly possible that the overall hump shaped pattern in life satisfaction - so often observed in the literature - is driven by only a subset of domains. Establishing the relative importance of the various domains with respect to childbearing matters since it will improve the precision for any kind of policy intervention where childbearing and fertility are parameters of interest. In addition, it brings about theoretical insights to this literature. For instance, if it is the case that satisfaction with the partner is an important domain for childbearing, one can draw important lessons from the literature concerning couple's relations and conflict resolution. If, instead, satisfaction with the financial situation is an important domain, one can invoke arguments about opportunity costs of childbearing. Similar arguments can be made about work-life balance or satisfaction with leisure time.

In this research note we explore these issues by considering sixteen satisfaction domains. In line with previous studies (Clark *et al*. 2008; Pollman-Schult, 2014; Margolis and Myrskylä, 2011; Myrskylä and Margolis, 2014), we estimate a series of fixed effect models for these satisfaction domains while childbearing events are taken as the key explanatory variable - together with a set of control variables.

2. Data, sample and methods

We use data from 13 annual waves of the Household Income and Labour Dynamics in Australia (HILDA) starting in 2001. HILDA is a panel survey on a representative sample of Australian households that collects information about family and labour dynamics, economic and SWB on all the adult members of the households. Importantly for our purpose, it contains repeated measures of overall life satisfaction and satisfaction with 17 specific domains, a feature that makes the survey unique. All domains are measured on a ten point scale ranging from 0 (completely unsatisfactory) to 10 (completely satisfied).

Table 1. Domains of life satisfaction in HILDA dataset.

Satisfaction with:
1. Relationship with the partner
2. Leisure time
3. Work-family balance
4. Employment prospects
5. Financial situation
6. Health
7. Work
8. Pay
9. Job security

10. Working hours
11. Job in general
12. Home
13. Safety
14. Community
15. Neighborhood
16. Relationship with the parents
17. Relationship with the child

We consider men and women who experienced the first birth and potentially the second child during the interview period. The final sample is made up of 1060 women (aged 18-50) and 945 men (aged 18-60) for the first childbearing event. Individuals are followed over a period of nine years, from four years before the birth of the child to 4 years after the birth. For the regressions we include similar control variables as studies before us. Age is included in classes ($\leq$ 25; 26-30; 31-35; 36-40; > 40) while education is divided in three classes: primary (those who does not reach the end of the secondary school), secondary and advanced diploma, tertiary and postgraduate education. Income refers to equivalent disposable household income (net of taxation and divided for the number of household members). Health status is measured on a 5 point scale and refers to objective limitation in the daily life because of health problems. Work status is derived from working hours per week and we distinguish those working part-time, full-time and more of 40 hours per week, and those working zero hours. We follow the same methodological approach as Margolis and Myrskila (2014), i.e. time dummies are included for the four years before and the four years after the birth of the child, using as reference category the first year of the time span. The model for the individual's satisfaction over time (S_{it}) is defined as:

$$S_{it} = a_i + bX_{it} + T_t + \varepsilon_{it}$$

where T_t refers to the time dummies, X_{it} is the vector of the time-dependent covariates, a_i is the unobserved individuals' heterogeneity and ε_{it} is the vector of the residuals. We show the estimated coefficients (i.e. the effect of childbearing on satisfaction) for each time period for each of the domains. As such it provides a direct indication of the domains' sensitivity with respect to the childbearing events. Estimated trajectories are plotted by gender.
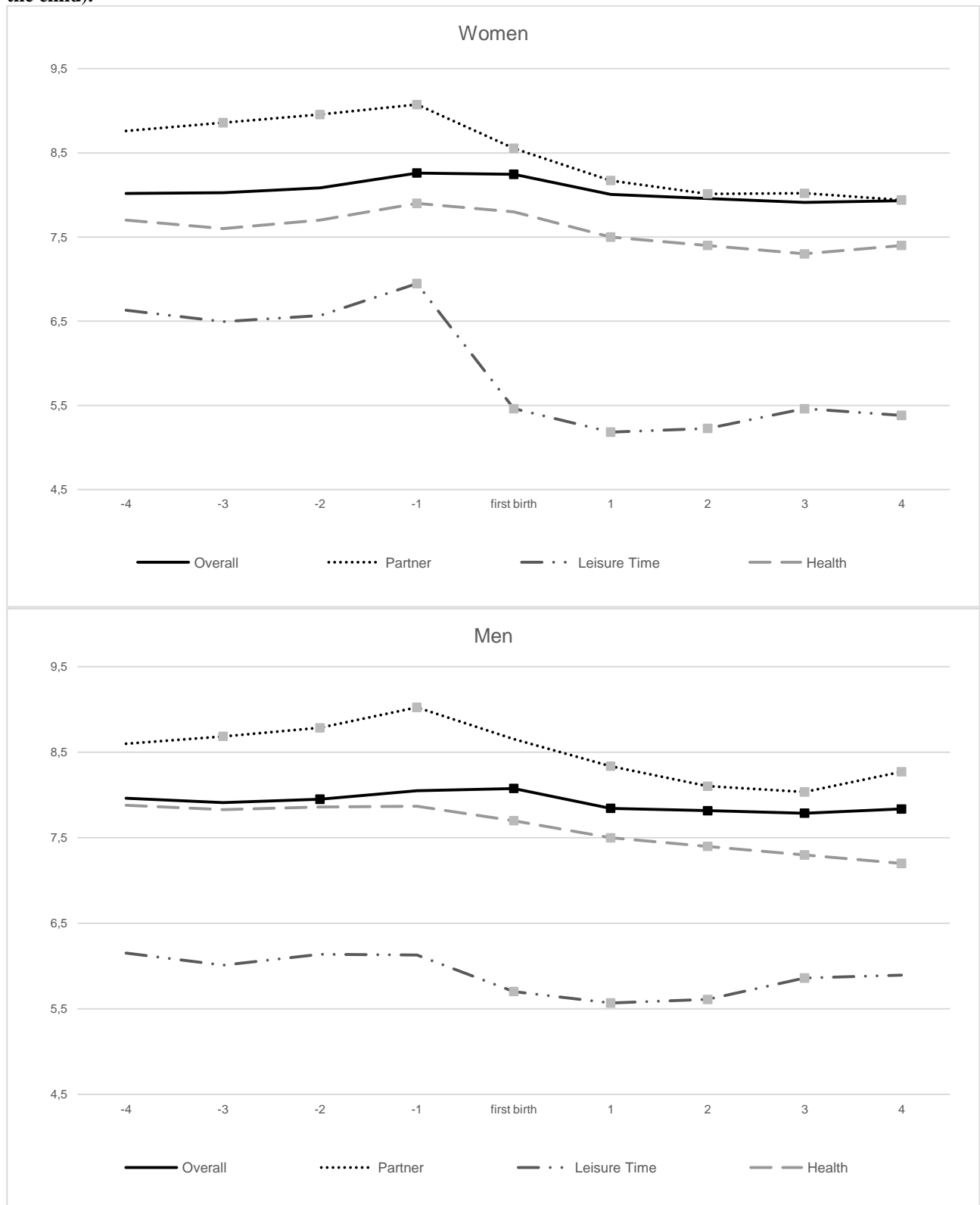
3. Results

The fixed effect estimates for first births are plotted in Figure 1 (complete models are reported in the Appendix). The solid lines show the overall life satisfaction trends for women and men before and after the first childbirth[1]. The usual hump-shaped pattern of anticipation and adaptation commonly reported in other studies is found also for this Australian sample. Again consistent with those studies before us, the anticipation (i.e. the increase in life satisfaction prior to childbearing) is more pronounced for women than for men. In addition to the overall life satisfaction, we plot here the estimates for the three domains that appear to react more strongly to the childbearing event. They are 1) satisfaction with the partner, 2) the leisure time, and 3) satisfaction with health. The trajectories for these domains deviates from the overall life satisfaction, both in terms of levels and shape. The starkest deviation comes from satisfaction with leisure time for women, which plummets from the time of the pregnancy to reach a level around 5, which is dramatically lower than the overall satisfaction level. Interestingly, the satisfaction with leisure time shows little sign of improving. This pattern is again in stark contrast with the satisfaction with the partner. We see a clear anticipation effect, which peaks at the time of the pregnancy, for then to decline significantly. Interestingly, the estimated level is much higher than the overall life-satisfaction. The third domain concerns satisfaction with health. Here we see a slight increase at the pregnancy year – for women but not for men. Thereafter there is a negative trend for both parents. Importantly, for neither of these domains, do we see any indication that women's satisfaction returns to the original level observed prior to the childbearing event. The estimated trajectories for the remaining domains are listed in Figure 2. Whereas these domains differ in terms of the estimated levels, they do not appear to react strongly to the childbearing event. Curiously, the HILDA includes a seventeenth domain, which refers to the satisfaction with the relationship to the new born child. For obvious reasons, we can only make estimation for this domain after the birth event. As is clear, the average satisfaction is extremely high, but steadily declining for both men and women over time.

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[1] The same analyses was performed with the second childbirth. The domains that change the most are the same of the first childbirth, and the paths are consistent with the overall life satisfaction trend across the second birth. In particular, anticipation effect is very marginal while the following decline is much stronger and, on average, with no evidence of adaptation. These estimates are available from the authors upon request.
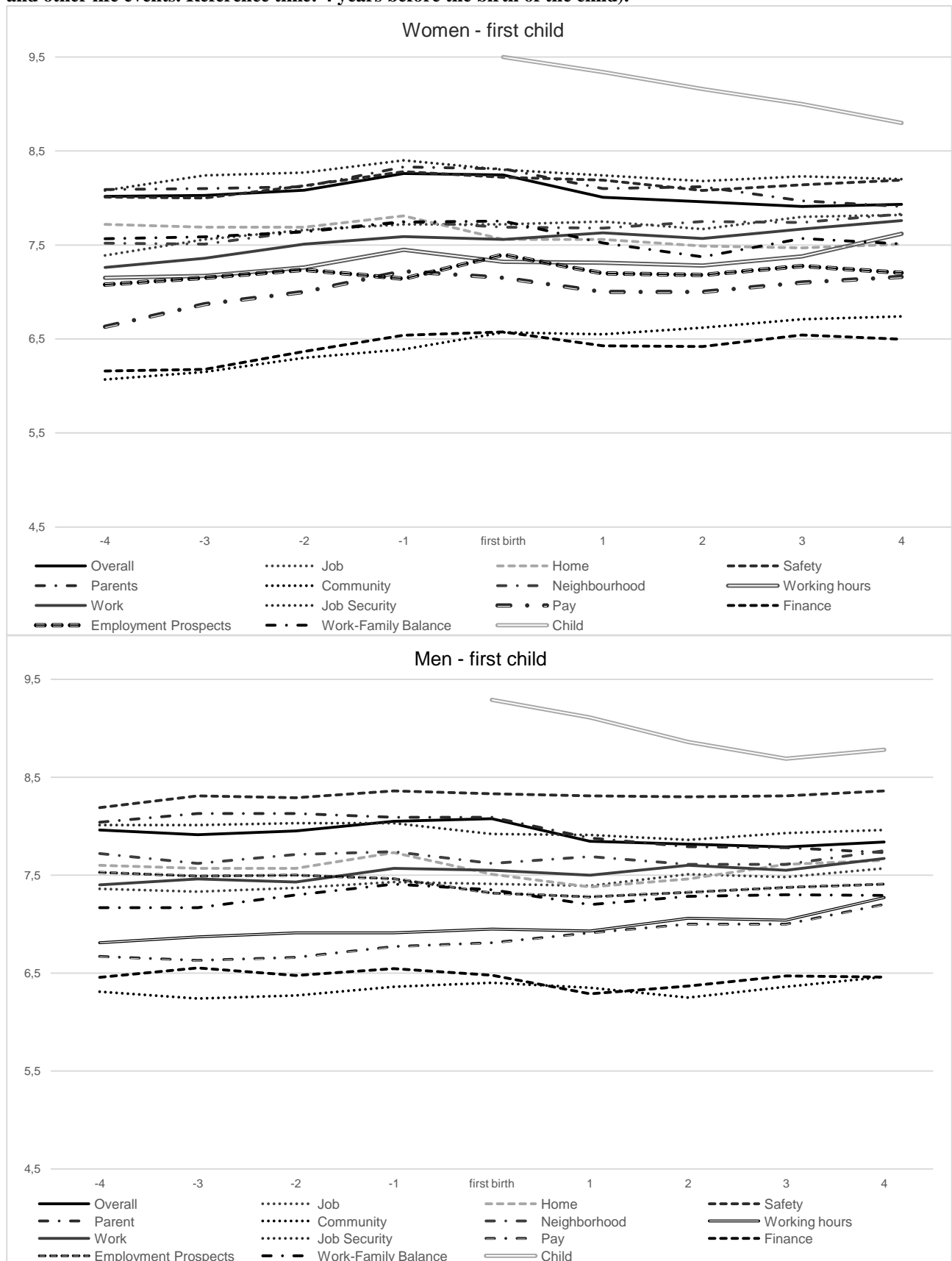
Figure 1. Trajectories over time of three domains of satisfaction (partner relationship, health and leisure time) and of the overall life satisfaction, for women and men, across the transition to the first child (fixed effects, controlling for socio-demographic characteristics and other life events. Reference time: 4 years before the birth of the child).

Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.
Note 2: dots indicates the coefficient is significant at least at p=0.05

Figure 2. Trajectories over time of others domains of satisfaction and of the overall life satisfaction, for women and men, across the transition to the first child (fixed effects, controlling for socio-demographic characteristics and other life events. Reference time: 4 years before the birth of the child).

Note 1: control variables are age classes, working conditions – i.e. inactive/unemployed; part-time less than 36 hours/week; full-time 36-40 hours/week; full-time more than 40 hours/week, equivalent household income, health conditions, experience of separation/divorce, experience of death of partner/close relative or friend, pregnancy of another child, birth of another child, age classes, level of education.

4. Reflections

By considering the different domains of satisfaction we find that they appear to react rather differently to childbearing events, with the majority reacting very little to childbearing events, whereas the biggest reaction appears for satisfaction with leisure time and satisfaction with the partner, and to some extent satisfaction with health. One critique towards the analysis of life satisfaction and happiness is that typically the estimated effects of life course events - childbearing included - are modest. This is also confirmed here when looking towards the overall life satisfaction, which is in line with those estimates based on the BHPS or GSOEP. The average effect changes by around 0.5 on the 10 point scale. For specific domains - in contrast - the effects are potentially substantial. We find satisfaction with leisure time to change in a remarkable way for women. For this domain we observe the estimated averages to vary from under 5 to above 9 on a 10 point scale, and the observed declines appear to be long lasting, with no encouraging sign of recovery to the original level.

The fact that satisfaction with partner and leisure time reacts more strongly surrounding childbearing is hardly groundbreaking or unexpected. Childbearing is a joint decision and experience of the couple, and as such, a childbearing event will necessarily involve the partner in important ways. The severity of the decline suggests that the presence of children tends to compromise the harmony of the couple, and potentially bringing about more conflicts concerning activities that concern housework and childcare tasks (LaRossa and LaRossa, 1981; Doss *et al*., 2009; Gallie and Russel, 1998). Secondly, children are time consuming and impose a tremendous change to the daily chores of the household, naturally reducing leisure time and time for couple's intimacy (LaRossa and LaRossa, 1981). The fact that women suffer much more than men in terms of their satisfaction of leisure time suggests that the burden tend to fall on them. Such an argument is nothing new of course. Mothers are more exposed to the demands from parenting, as they often tend to be in charge of the primary childcare (Ross and Van Willigen, 1996).

One cannot easily generalize from these regression analysis, but at least for this Australian sample, which in terms of sample design is similar to the main panel surveys, it appears that only a limited number of domains causes the general hump-shaped trajectory in overall subjective wellbeing. The key message from this research note is that studies of SWB and life course events are limited in that an overall measure of subjective wellbeing, be it life satisfaction or overall happiness, masks important relationships that may matter both for the theoretical understanding and in terms of informing policy makers. For future studies of life events and SWB, one may get deeper insights if one takes a domain approach.

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Appendix

Appendix

Table A1. Multivariate regressions with fixed effects for the overall life satisfaction, the relationship with the partner and the leisure time, across the transition to the first child, for women and men.

	MEN			WOMEN		
	Overall life satisfaction	Relationship with partner	Leisure time	Overall life satisfaction	Relationship with partner	Leisure time
Years from the birth						
3 years before	-0.057	0.078	-0.147	0.013	0.103	-0.12
2 years before	-0.024 *	0.171 **	-0.025	0.074	0.201 **	-0.039
Pregnancy year	0.067 **	0.402 ***	-0.039	0.256 ***	0.322 ***	0.354 ***
First birth	0.087	0.023	-0.471 ***	0.248 ***	-0.187 *	-0.111 ***
1 year after	-0.151 **	-0.304 ***	-0.602 ***	0.016	-0.566 ***	-0.137 ***
2 years after	-0.184 ***	-0.553 ***	-0.552 ***	-0.027	-0.72 ***	-0.131 ***
3 years after	-0.217 ***	-0.63 ***	-0.296 *	-0.072	-0.717 ***	-0.106 ***
4 years after	-0.173 *	-0.406 ***	-0.253	-0.048	-0.804 ***	-0.114 ***
Age class						
<25	0.006	-0.003	-0.12	0.148 *	-0.009	0.303
26-30	-0.018	0.049	0.045	0.043	0.071	0.260 **
36-40	0.044	-0.024	-0.200	-0.078	-0.084	-0.336 ***
>40	0.087	-0.068 *	-0.107	-0.137	-0.259	-0.981 ***
Highest level of education						
Secondary	-0.081	0.226	-0.455	0.048	0.065	0.127
Tertiary	-0.209	0.314	-0.350	0.193	0.068	0.461
Employment status						
Inactive/Unemployed	-0.155 ***	-0.074 ***	0.932 ***	0.071	0.192 ***	0.905 ***
Working part-time	-0.002	-0.185 ***	0.465 ***	-0.059	0.065	0.728 ***
Working more than 40 hours/week	-0.031	-0.136 ***	-0.750 ***	-0.167 ***	0.015	-0.583 ***
Self-assessed health problems	-0.238 ***	-0.304 ***	-0.862	-0.254	-0.188 ***	-0.596 ***
Equivalent household income	-0.000	-0.000	0.009 **	-0.000	-0.006	0.013
Other life events						
Second pregancy	0.148 ***	0.290	0.279 ***	0.149 ***	0.809 ***	0.412 ***
Second birth	-0.025	0.066	-0.144	0.101	-0.033	-0.493
Second child 1 year or more	0.060	0.103	-0.342 ***	-0.126 **	-0.490	-0.983 ***
Marriage	0.113 ***	0.140	0.011	0.054	0.074	0.160
Separation	-0.210 ***	-0.104	0.015	-0.577 ***	-0.121 ***	-0.182
Constant	8.439 ***	8.984 ***	6.880 ***	8.288 ***	8.943 ***	6.105 ***
N	*945*	*942*	*945*	*1060*	*1040*	*1060*

Note 1: Reference categories: 4 years before the birth of the child, age class 31-35, secondary level of education, working full-time.
Note 2: *** for *p*=0.001; ** for *p*=0.01: * for *p*=0.05

Table A2. Multivariate regressions with fixed effects for the overall life satisfaction, the relationship with the partner and the leisure time, across the transition to the second child, for women and men.

	MEN			WOMEN		
	Overall life satisfaction	Relationship with partner	Leisure time	Overall life satisfaction	Relationship with partner	Leisure time
Years from the birth						
3 years before	-0.015	-0.034	-0.177	-0.054	-0.213 ***	-0.094
2 years before	0.030	-0.080	-0.060	-0.023	-0.285 ***	-0.115
Pregnancy year	0.089	-0.017	-0.124	0.103	-0.281 ***	-0.105
Second birth	-0.016	-0.104	-0.128 *	-0.165	-0.715 ***	-0.235 **
1 year after	-0.114	-0.324 *	-0.152 *	-0.320 **	-0.871 ***	-0.186 *
2 years after	-0.166 **	-0.278	0.078	-0.353 ***	-0.972 ***	-0.144 *
3 years after	-0.224 ***	-0.483 **	0.135	-0.395 ***	-0.154 ***	-0.137
4 years after	-0.255 ***	-0.639 ***	0.054	-0.398 ***	-0.164 ***	-0.133
Age class						
<25	0.060	-0.131	-0.139	0.135	0.074	0.163
26-30	-0.002	-0.027	0.018	-0.025	0.021	0.071
36-40	0.156 ***	0.067	-0.029	-0.04	0.001	-0.108
>40	0.164	-0.066	0.028	-0.011	0.040	-0.413
Highest level of education						
Secondary	0.174	-0.608 **	0.497	-0.233	-0.232	0.611 *
Tertiary	0.181	-0.826 **	0.128	-0.095	-0.941 *	0.747
Employment condition						
Inactive/Unemployed	-0.071	0.210	0.118	0.052	0.099	0.789 ***
Working part-time	0.028	-0.086	0.110	0.023	-0.017	0.683 ***
Working more than 40 hours/week	-0.103 ***	-0.658	-2.560	-0.493	-0.416	-1.964 ***
Self-assessed health problems	-0.223 ***	-0.310 ***	-0.149	-0.248	-0.240 ***	-0.187 ***
Equivalent household income	0.005	-0.018	0.006	0.003	0.003	0.017
Other life events						
First pregnancy	0.115 *	0.380 ***	0.280 ***	0.257 ***	0.379 ***	1.139 ***
First birth	0.188 ***	0.098	-0.062	0.236 ***	0.084	-0.026
First child 1 year or more	0.207	-0.245	-0.368	0.114	-0.029	-1.310 ***
Third pregnancy	0.132	0.224 *	-0.242	0.179 **	0.381 ***	0.250
Third birth	-0.132 ***	-0.160	-0.024	-0.025	0.270 ***	0.072
Third child 1 year or more	0.215 ***	0.331 ***	-0.350 **	0.115	-0.030	-1.211 ***
Marriage	-0.029	0.100	0.164 ***	0.099 ***	0.287 ***	0.372 ***
Separation	-0.298 ***	-0.224 ***	-0.033	-0.484 ***	-0.165 ***	0.201
Constant	8.071 ***	9.912 ***	5.713 ***	8.551 ***	9.638 ***	5.256 ***
N	*750*	*749*	*750*	*904*	*888*	*904*

Note 1: Reference categories: 4 years before the birth of the child, age class 31-35, secondary level of education, working full-time.
Note 2: *** for $p=0.001$; ** for $p=0.01$: * for $p=0.05$