Changes in childbearing desires and expectations of childless men and women

As observed by Caldwell (1996), there has been increased interest in the use of survey data by demographers in recent years, and this interest has been particularly strong among those seeking to gain insight into the dynamics of fertility behaviour in low fertility countries. Survey data on individuals' fertility plans can be used to investigate how fertility decision making and individual agency operate at the micro level; elements which are easily lost when the focus is on the macro-level structural, demographic and social context in which fertility occurs (Schoen, et al. 1999; de Vaus 2002:21). Two of the most commonly studied prospective fertility questions are those that ask respondents about their *desire* for children and questions that ask respondents about their *expectations* or intentions for future children. Conceptually, the information derived from each of these two types of questions is distinct. Desires are thought to measure what the individual themselves wants, while intentions are assumed to also incorporate or take into account situational factors that may prevent someone from achieving those desires (Miller and Pasta 1995:533). So it is generally understood that situational factors and perceived constraints affect individuals' intentions but not their desires.

Despite the importance of this assumption, very little research has investigated the relationship between fertility desires and fertility expectations (Thomson 1997; Weston & Qu 2004). Most studies on individuals' fertility plans have tended to focus on one concept alone, for example desires (Thompson et al 1990; Wilson & Khoo 2006; Heiland et al. 2008), but more commonly on expectations/intentions (Freedman et al. 1965; Westoff & Ryder 1977; Morgan 1982; Heaton et al. 1999; Schoen et al. 1999; Stewart 2002; Berrington 2004; White & McQuillan 2006; Rosina & Testa 2009; Bhrolcháin et al. 2010; Iacovou & Tavares 2011).

In this paper we examine the relationship between childbearing desires and childbearing expectations among childless individuals with the aim of gaining further insight into the fertility decision making process. Using a theoretically driven model with insights from psychology, we analyse eight waves of data (2001-2008) from the

Household, Income and Labour Dynamics in Australia (HILDA) survey to test whether desires and expectations are influenced by the same factors at one point in time, as well as over time. In particular we investigate whether life course events affect desires as well as expectations, and test whether there are times in the life course where desires and expectations are more or less likely to converge.

Defining desires, intentions and expectations

In surveys, the main concepts relating to fertility plans that are usually measured are desires, intentions, and expectations. For each of these concepts questions may be asked about three different components of that concept: (1) childbearing; (2) child-number; and (3) child-timing (Table 1). Childbearing questions are designed to measure whether or not an individual wants or intends to have a(child) and they are the simplest and most general types of questions. Child-number questions measure how many children the individual want/intends to have, and child-timing questions ask specifically about the age or time period that the next child is desired or planned.

Despite their distinct definitions, the terms desire, intention and expectations are often used interchangeably in the fertility literature, leading to conceptual confusion (Miller & Pasta 1995). For example some authors refer to fertility intentions when analyzing data on fertility desires (Symeonidou 2000; Spéder & Kapitány 2009).To avoid such confusion in this paper, we start by defining the main types of fertility concepts included in surveys before discussing the proposed theoretical link between desires and expectations.

Questions on fertility desires aim to measure either to what degree respondents want to have children, how many children they want or at what point in time they want to have their child or next child.[1]

[1] Fertility desires are closely related to fertility *ideals,* however the format of the two questions is subtly different. Questions on ideal fertility often include an explicit prompt for the respondent to exclude consideration of their current circumstances and any potential constraints. For example respondents in the Scottish Social Attitudes Survey (2005) are asked 'Thinking in general and regardless of your present circumstances, how any children would you ideally like to have?' Even though questions on desires do not usually contain such prompts, they are still commonly assumed to measure a person's wishes and to not include consideration of any possible constraints (Thomson 2004).

Table 1. Examples of survey questions on fertility desires, intentions and expectations

Desires	Intentions	Expectations
Childbearing		
Would you like to have any (more) children?[2]	Do you intend to have any (more) children?[3]	How likely are you to have a child in the future?[4]
How much would you like to have a (or another) child in the future?[5]		Do you think that you will have any (more) children? [6]
Child-number		
How many children would like to have[in total] [over your life course]?[7]	How many (more) children [in total] do you intend to have?[8][9]	How many children do you think you will have born to you in total, including those you have had already who are still alive/ (and) the one you are expecting?
Child-timing		
At what age would you like to have your (next) child?	Do you intend to have a(nother) child within the next X years?[10]	How old do you think you will be when you have your first/next baby?

Questions on future fertility intentions and expectations are the most widely studied in fertility research because they are believed to have the most direct effect on fertility behaviour. While intentions and expectations are closely linked, there is a definitional difference between the two terms. Intentions are 'the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior', whereas expectations can be defined as 'the individual's estimation of the likelihood that he or she actually will perform' the behaviour (Warshaw and Davis

[2] National Fertility Study [Greece] 1983
[3] 1970 British Cohort Study: Twenty-Nine-Year Follow-up [United Kingdom], (1999-2000); National Child Development Study: Sweep 5 [United Kingdom] (1991); National Survey of Families and Households [United States] (1987-1988)
[4] Negotiating the Life Course Survey [Australia], Wave 1 (1997)
[5] Fertility Decision Making Project [Australia], (2003-2004)
[6] General Household Survey [United Kingdom], (1993-2006)
[7] Family and Social Subjects [Italy] 2003; Fertility Decision Making Project [Australia], (2003-2004); National Fertility Study [Greece] 1983
[8] Eurobarometer [Europe] (2006); National Child Development Study: Sweep 5 [United Kingdom], (1991)
[9] Generations and Gender survey [International], Wave 1
[10] Generations and Gender survey [International], Wave 1; Family and Social Subjects [Italy] 2003

1985:214-215). In forming a judgment about an expectation, individuals may consider a variety of factors, including possible environmental facilitators or constraints, that could influence their behaviour over and above their present intention (Warshaw and Davis 1985:215). Expectations therefore measure something more than intentions, in the sense that while someone could intend to do something they may not expect that they will achieve their goal.

The degree to which intentions and expectations measure the same thing depends on the act or behaviour in question (Rhodes & Mattheson 2005). For behaviours which are expected to occur a long time into the future, or for which a person has little volitional control, people may think more in terms of expectations rather than intentions. In comparison, for behaviours which are fully under the individual's volitional control, there should be little or no theoretical distinction between intentions or expectations (Warshaw and Davis 1985:223; Rhodes and Matheson 2005:65). Two examples illustrate this point with regard to fertility. A newly married person with no children may be able to express their intention to have a child in the future, as well as an expectation that is based on both their current intention as well as possible anticipated constraints. On the other hand a single person is likely to have a much lower perceived volitional control over childbearing. They are two steps removed from childbearing, in that they have to find a partner first and then have a child (Hoem & Bernhard 2000). In this case a question on intention may be more difficult to answer and would be likely to illicit an expectation type response.

In the fertility literature many authors acknowledge that there is a definitional distinction between these two concepts, but nevertheless use the terms interchangeably (Miller and Pasta1988; Morgan 2001; Smallwood & Jefferies 2003; Hayford 2009). The justification for treating the term 'intention' and 'expectation' as synonymous is that they are thought to function in the same way. For example Ryder and Westoff (1971) found no distinguishable differences in women's intended and expected family size. However there are a number of reasons why their findings are not unexpected. Firstly their study was based on the 1965 National Fertility Study which only interviewed currently married women. For currently married women the main difference between intended and expected children would be due to perceptions of anticipated difficulties with fecundity

or fertility regulation. Secondly, as the authors acknowledge, a large part of the similarity between intended and expected number of children was due to the common component of current parity. Child-number measures are relatively inflexible, in the sense that the degree of anticipated constraints in achieving an intended family size would have to be large before expected child-numbers would be affected.[11]

In this paper will use the term childbearing expectations when discussing our findings because that is what is being measured in the HILDA survey. Also since our sample includes individuals who may not have formed concrete childbearing intentions, for example young people and single people, we believe the term fertility expectation is more appropriate.

The link between desires and expectations in fertility-decision making models

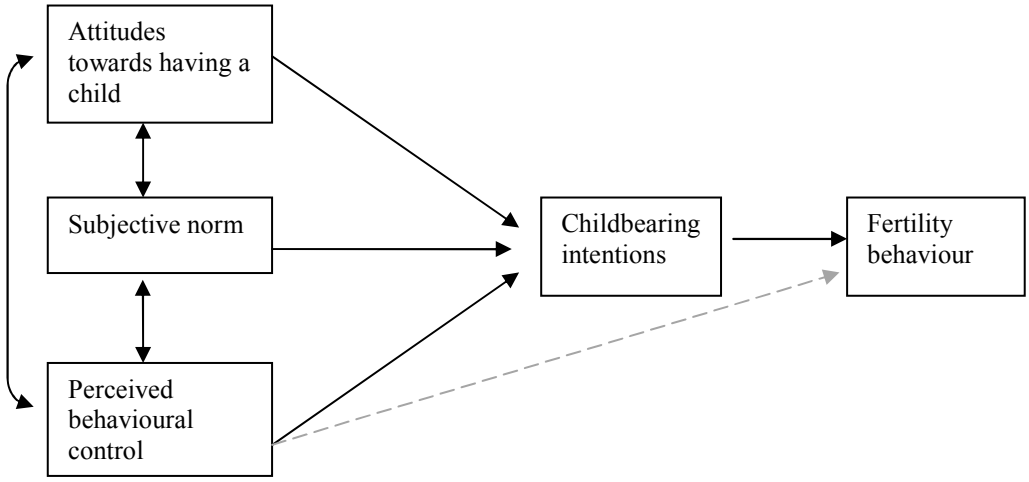
Recent studies have used several different social psychology theories to provide a framework for understanding the fertility-decision making process (Langdridge et al 2004). Perhaps the most influential attitude-behaviour model in the current literature is the Theory of Planned Behaviour (Ajzen 1991). While not developed specifically for looking at fertility decisions, the Theory of Planned Behaviour (TPB) has been used as a framework for examining the determinants of childbearing and child-timing intentions (Billari et al. 2009; Klobas 2010; Dommermuth et al. 2011), and of changes to fertility expectations over time (Iacovou & Tavares 2011). Another model used in the literature, which was developed specifically in relation to fertility, is the Traits-Desires-Intentions model proposed by Miller & Pasta (1998, 1993, 1994). This section will outline the main components of these two models, paying particular attention on how they theorise the link between fertility desires and fertility expectations.

The TPB posits that there are three determinants of intentions: attitude towards the behaviour, subjective norm and perceived behavioural control (Figure 1). Attitude towards the behaviour refers to the degree to which a person has favourable or

[11] It is unclear whether a difference between intentions and expectations would have been present had some other measure of fertility been considered, such as general childbearing, or child-timing. Despite these limitations the study has been very influential as a justification for treating intended and expected fertility as synonymous (Miller & Pasta 1998; Morgan 2001; Hagewen & Morgan 2005; Hayford 2009; Miller et al 2010). There has been no recent systematic research investigating the link between childbearing intentions and expectations.

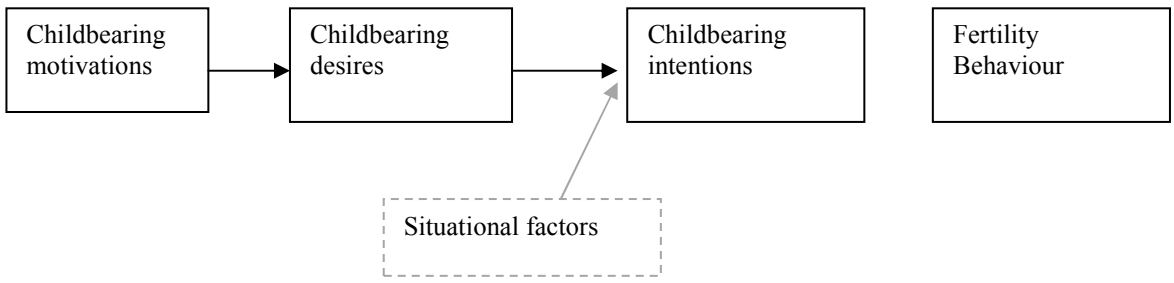
unfavourable views regarding the behaviour in question, for example having a child. Subjective norms refer to the perceived social pressure felt to perform or not perform the behaviour. Finally, perceived behavioural control refers to the perceived ease or difficulty of performing the behaviour and includes consideration of current resources as well as anticipated constraints (Ajzen 1991:188). Perceived behavioural control was added to the earlier version of the theory, known as the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), to better explain behaviours which are not under the full volitional control of the individual. The inclusion of perceived behavioural control has made the TPB particularly useful for looking at childbearing as this is a behaviour which is often not under individuals' direct volitional control. Individuals may face a number of constraints including internal ones, for example relating to fecundity, or external ones such as the lack of a suitable partner (Schoen et al.1999).

Figure 1. The Theory of Planned Behaviour (Ajzen 1991)



source: Ajzen 1991:182

Figure 2. The Traits-Desires-Intentions model (Miller & Pasta 1995)



source: simplified version of model adapted from Miller and Pasta1995:533

As Kodzi et al. (2010) note, the central focus of the TPB is on intentions, and there is no explicit mention made about how desires fit into the model, and this has been one of the criticisms of the model. It has been argued that while attitudes, subjective norms, and perceived behavioral control provide the motivation for intention, they do not adequately explain how intentions are triggered (Perugini & Bagozzi 2001:83). To this end, Perugini & Bagozzi (2001) have suggested that the TPB could be modified by including desires in the framework, so that the three central antecedents directly affect desires, which in turn directly affect intentions.

The link between fertility desires and fertility expectations is explicitly outlined in the Traits-Desire-Intentions model (Figure 2). In this model, the starting point is an individual's underlying motivation towards childbearing. This motivation has biological origins but is also shaped by people's experiences (Miller & Pasta 1993;1995). Most of the time motivational disposition is latent in the sense that it does not enter a person's consciousness or influence their behaviour (Miller & Pasta 1993). However if the motivation does become 'activated' it is experienced as a desire for children. Intentions are then formed as a result of the integration of these desires with an appraisal of reality and of perceived situational constraints (Miller & Pasta 1993; 1995). As Miller et al. note 'the difference between desires and intentions is akin to the difference between what one would like to do given no situational constraints and what one actually plans to do given the reality within which one ordinarily operates' (2004:194). In many ways the situational factors discussed by Miller & Pasta (1993; 1995) are similar to the perceived behavioural control component of the TPB. In both models people's perception of possible constraints will affect their intentions regarding childbearing.

Effect of situational factors on fertility expectations

There is some evidence in the literature that situational factors or perceived behavioural control affect fertility intentions or expectations, but not desires, as proposed by Miller & Pasta (1995). For example, cross-sectional studies have found that expected family size is often lower than desired family size (Ryder & Westoff 1971, Weston et al. 2004). This finding suggests that the answers respondents give about fertility expectations are incorporating both a person's desired family size, plus some accounting of possible

constraints in achieving this number. The difference between desired and expected family size may be particularly large when individuals are faced with strong situational constraints. In a recent Australian study, older women and single people who desired another child were the most likely to judge that they were somewhat or very unlikely to achieve this goal (Weston et al. 2004).

If situational factors have a direct effect on intentions, then changes in situational factor should lead to changes in fertility expectations. A number of recent longitudinal studies, have found evidence that changes in situational factors and perceived behavioural control influence fertility expectations leading to both upwards and downwards revisions over time (Berrington 2004, Mitchell & Gray 2007; Liefbroer 2009; Hayford 2009; Iacovou & Tavares 2011). These studies find that age and relationship status are particularly important factors in changing fertility intentions and expectations over time.

Due to the biological features of reproduction and the fact that fecundity declines with age, age can be thought of as one of the primary constraints to childbearing. While the constraint of ageing on fertility is much more direct for women, it also affects males through their own declining fecundity as well as through their partner's (Iacovou & Tavares 2011). The constraint imposed by age is not purely biological however. Research by Billari et al. (2011) suggests that people perceive social age deadlines for childbearing which are often lower than biological deadlines. Further, these deadlines are often stricter for women than for men.

If women and men perceive increasing age as a constraint to childbearing, then fertility expectations could be projected to decline with age. Two recent studies that have looked at family size measures found a general trend of downward revision in intentions and expectations at older ages (Liefbroer 2009; Iacovou & Tavares 2011). However rather than the a sudden drop as people approached the end of their reproductive window, Iacovou & Tavares (2011) noted a more gradual process with a smooth decline in fertility expectations from the early twenties onwards as people moved through their childbearing ages. The studies also found that at the younger ages there were considerably more adjustments made, both upwards and downwards, compared to at the older ages. These revisions could be closely related to changes in other domains of life, such as employment and relationship formation.

Changes in relationship status have been found to be strongly related to revisions in childbearing expectations over time (Mitchell & Gray 2007; Hayford 2009; Qu et al. 2000; Liefbroer 2009; Iacovou & Tavares 2011). Using two waves of data from the Australian Family Formation Project conducted in 1981 and 1990/91, Qu, et al. (2000) found that among initially childless individuals, those who separated from their partner between the two waves were the most likely to revise their intentions for children downwards, followed by those who were continuously single. Similarly, Hayford (2009) found that having never married was strongly related to experiencing declining family size expectations over time. Entering a partnership however can have the opposite effect, and this effect may be particularly strong among those who separate and find a new partner (Iacovou & Tavares 2011).

Education, financial and work-related reasons are also likely to be a feature in revisions of childbearing intentions. An improvement in income may lead to an increased ability and confidence to either start childbearing or to have additional children, and therefore increase the intention for future childbearing. Conversely, the loss of a job or a lowering of income may lead to a lowering of intentions. However to the extent that childbearing is perceived as having a negative consequence for careers and incomes, particularly for women, an increase in income or job prospects may be related to a downward revision of expectations. There is some limited evidence for this in that men and women in their thirties who are working relatively long hours have been found to be more likely to adjust their intentions downwards compared to their counterparts working shorter hours (Liefbroer 2009); similarly women with high earnings are more likely to decrease their family size expectations over time (Iacovou & Tavares 2011). However, the effect of employment or income characteristics on changing expectations is generally minimal compared to the effect of age and relationship changes (Liefbroer 2009; Hayford 2009; Iacovou & Tavares 2011).

Cognitive Dissonance Theory

These findings regarding the change in expectations over time in response to changing situational factors fit well with the TPB and the Trait-Desire-Intentions model. However, less is known about the pattern of change in desires over time. Do desires remain stable over the life course, with only expectations responding to changing circumstances, or do desires also change in line with changing expectations? Few studies have looked specifically at this issue and incorporated consideration of both desires and expectations (Weston & Qu 2004; Holton et al. 2011).

The studies that have considered the theoretical link between these two measures suggest it is unlikely that childbearing desires remain unaffected by a person's circumstances and changes in childbearing expectations. Holton et al. suggest that desires may be better thought of as 'childbearing ideals which have been constrained or influenced by women's circumstances…' (2011).

Insights from various psychological theories can be used to help to explain the links between fertility desires and expectations. One particularly relevant theory is the theory of cognitive dissonance (Festinger 1957). Cognitive dissonance is a 'psychologically uncomfortable' and 'anxiety arousing' state that occurs when individuals' actions or circumstances are inconsistent with their beliefs (Donovan and Henley 2003:100). For example, if a positive wish to have a child is matched with a negative expectation that this is actually going to occur, due to a situational factor such as having no partner or having financial or health problems, then individuals will feel a tension or dissonance. In response, an individual may attempt to reduce these feelings by lowering their fertility desires to match their lower expectations. Individuals may even provide further rationalizations for not having children by focusing on negative aspects of childbearing, or positive aspects of not having more children.

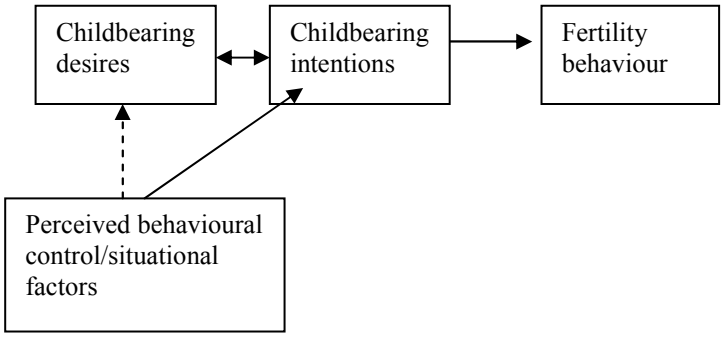
The concept of cognitive dissonance is very closely related to the life span theory of control proposed by Heckhausen et al (2001), which was used in a recent article by Liefbroer (2009), and the assimilative and accommodative coping model proposed by Brandstädter's (2009). These theories, proposes that in striving for a particular developmental goal, such as childbearing, if there is a discrepancy between factual and

desired developmental outcomes, there are two possible strategies. Firstly individuals may try to neutralize the discrepancy by changing their external circumstances to fit their needs and desires (primary control striving or assimilative coping). However if this is not possible or unsuccessful, and if a developmental goal is passed or is unlikely to be achieved, then individuals may instead adjust their own aspiration levels to the given situational constraints (accommodative coping) and use goal disengagement (a compensatory secondary control) to devalue that goal and enhance alternative personal goals (Heckhausen et al 2001; Brandstädter 2009).

Defensive psychological mechanisms such as goal disengagement protect individuals from negative evaluations relating to the failure to reach their goal, so that a positive sense of wellbeing is maintained or achieved (Heckhausen et al 2001; Weston & Qu 2004:12; Brandstädter's 2009; Gebhardt et al 2010). Hence the aim is to achieve a balance for ones desires and expectations.

In order to understand the fertility decision making process we believe that a greater understanding of the link between fertility desires and expectations is necessary. In line with Weston & Qu (2004) and Holton et al. (2011) we propose that it is unlikely that people's childbearing desires are formed without consideration to situational factors and perceived constraints. Rather perceived constraints affect not only intentions but desires as well, and that over time as people's circumstances change, their desires as well as their expectations will change. Furthermore psychological mechanisms such as cognitive dissonance will act to bring a convergence between people's desires and expectations if these diverge, as in the case of someone with high desires for childbearing but low expectations that this will occur.

Figure 3: Proposed link between childbearing desires, childbearing intentions and situational factors



Research questions

This paper examines the relationship between desires and expectations for childbearing, taking a cognitive dissonance approach. We are specifically interested in (1) how similar people's desires and expectations are; (2) whether there are life course events that are associated with a change in desires; (3) whether there are particular factors that affect both desires and expectations.

Specific hypothesis

In line with the cognitive dissonance theory, we examine whether there are particular life events or changes in life that lead to a decline in desires that reflects declines in expectations. Specifically we hypothesis that there are particular events which act as enablers or constraints to achieving childbearing goals:

H1. As individuals age, desires and expectations for children will fall and there will be a convergence between desires and expectations.

- H1a. The effect of age on converging desires and expectations will be greater for women than for men.

H2. Experiencing a relationship breakdown will lead to a decline in desires and expectations for children and desires and expectations will converge.

- H2a. Alternatively, a new relationship will lead to an increase in expectations also leading to convergence between desires and expectations.

H3. Experiencing a 'shock' will have an effect on desires and expectations.

- H3a. Having a spell of poor health will lead to a decrease in both desires and expectations for childbearing (or vice versa for better health).
- H3b. Experiencing a spell of unemployment will lead to a decrease in both desires and expectations for childbearing (or vice versa for gaining employment).
- H3c. Financial insecurity will lead to a decrease in both desires and expectations for childbearing (or vice versa for financial security).

Data and method

Data

The data for this study come from the Household, Income and Labour Dynamics in Australia (HILDA) survey. HILDA is a nationally representative panel study which surveyed over 13,000 individuals aged 15 and over in the first wave (2001). HILDA collects information on three key dimensions of future fertility desire, expectation and family size. From each wave the following information is available:

- The desire for children is measured by a question which asks:

  Would you like to have [a child of your own/ more children] in the future?

  Responses are given using a 0-10 scale where 0 means 'Definitely do not want children' and 10 means 'Definitely want children'

- The expectation of having children is measured by the following question:

  And how likely are you to have [a child/ more children] in the future?

  Again responses are given using a 0-10 scale where 0 means 'Very unlikely' and 10 means 'Very likely'.

- Preferred family size is measured by a third question which asks respondents to state how many more children they intend to have. This question is only asked of respondents who stated an expectation for future children of 6 or above, in the previous question.

This study is restricted to the first two questions. Of interest here is not the total number of children that individuals would like, but rather how strong their preferences for a first child are, how their desires and expectations change, and what triggers these changes. For the purposes of this paper we also believe it is more suitable to examine general childbearing desires and expectations because these types of questions are expected to be more sensitive to changes in circumstances than question on child number desires and expectations. Udry (1983:19) points out that, children come only in units and so the total range of planned number of children is quite restricted. For this reason small

changes in circumstances are unlikely to have any effect on family size or child number plans.[12][13]

To examine the progression of fertility desires and expectations over time we use an unbalanced sample of childless individuals aged between 18-45, who were interviewed for at least two waves of the first eight waves of HILDA, conducted between 2001 and 2008. The sample is selected by identifying individuals who are childless at the first time they were observed, and these individuals are included in the study up until the time they have a first child or until the last wave they were observed, whichever comes first. After excluding respondents with missing values, the final analytical sample totals 4,817 respondents who in total were observed for 21,634 person years. Overall, just over 20 per cent of respondents were observed for all 8 waves, and the average number of waves observed for was 6.

We chose only to look at childless people because the factors affecting the desire and expectation for a first child may be very different from the factors affecting the decision to have a child at higher order parities (Dommermuth et al 2011). Furthermore, childbearing decision making is likely to occur sequentially, one birth at a time, in which case the decision of interest is whether or not to add another child to the family rather than how many children to have (Namboodiri 1972; Udry 1983; Hofferth 1983).

Dependent and independent variables

There are three main dependent variables that are of interest for our analysis are:

- childbearing desires [0-10]
- childbearing expectations [0-10]
- absolute difference between desires and expectations [0-10]

[12] We also note that there is a strong two child norm in Australia, and that, as argued by Livi Bacci (2001), in these types of settings family size preferences are fairly homogenous. In the case of family size preferences, the changing circumstances observed may have to be quite substantial for a preference to drop from two to one child, or from one child to no children.

[13] While measures on childbearing desires and expectations are free from many of the problems of family size measures there are a number of points that should be considered when interpreting responses. It is possible that the absence of a time reference means that some women will interpret the question as asking whether they want a child soon rather than in general (Bongaarts 1990). It is also important to consider that respondents may be giving socially desirable answers. Even in contemporary societies there is often a stigma involved with being childless and so it is 'socially difficult' for individuals to express a low desire for having children if they are currently childless (Rovi 1994).

The first two variables describe how much the person desires a child, and how likely they think it is that they will have a child respectively, on a scale of 0-10. The third variable describes how large the gap between the two scores is, in absolute terms. For example someone with a desire score of 9, and an expectations score of 5, would have an absolute difference of 4.

We include a range of time-varying as well as fixed independent variables.

Fixed independent variables included:

- Sex
- Country of birth (Australia, other English-speaking country, non-English speaking country)
- Number of siblings (0, 1 , 2, 3+)

The time varying independent variables are:

- Age (18-24, 25-29, 30-34, 35-39,4 0+)
- Relationship status (single, married, cohabiting)
- Highest education (University, Certificate/Diploma, Year 12, <Year 12)
- Activity (working, unemployed, not in the labour force)
- Self-rated health (Excellent, very good, good, fair/poor, missing[14])
- Importance of religion (Important, Somewhat important, not important, missing[15])
- Satisfaction with finances (dissatisfied, neither satisfied or dissatisfied, somewhat satisfied, satisfied/very satisfied)
- Gender role attitudes (Level of agreement to the statement that *"It is better for everyone involved if the man earns the money and the woman takes care of the home and children."* Agree, mixed feelings, disagree, missing[16])

[14] This question was asked as part of the self-completion questionnaire. Missing is included as a category so that respondents who did not return the self-completion questionnaire could still be included.

[15] This question was only asked in Wave 4 (2004) and Wave 7 (2007). Missing is included as a category so that respondents who did not participate in those waves could still be included. For respondents who were in Wave 4 but not in Wave 7, or vice versa, information from their religiosity at that wave was applied to all their other waves. For respondents who were in both waves, information from wave 4 was applied to waves 1-6, and information from wave 7 was applied to waves 7 & 8.

Some of these variables, for example highest education, number of siblings, country of birth, religiosity, and gender role attitudes we believe act as background factors that may explain differences in respondents' general level of childbearing desires. Other variables such as age, relationship status, economic activity, health and satisfaction with finances we believe act in a more direct way as enablers or constraints to childbearing. These variables therefore should be more important in determining the gap between desires and expectations, as well as in explaining revisions in desires and expectations over time.

Method

We investigate the relationship between the three dependent variables and the independent variables from both a cross-sectional and a longitudinal perspective. While the cross-sectional analysis examines differences in these three measures between respondents with different characteristics at one point in time, the longitudinal analysis identifies how the measures change within individuals over time.

Cross-sectional desires and expectations for children

For the cross-sectional analysis, we use information from the first wave each individuals was observed for. We start with a descriptive bivariate analysis comparing how the mean desire, the mean expectation score, and the mean absolute difference between desires and expectations differed according to the independent variables listed above. We also examine the percentage of cases where desires are higher than expectations, and *vice versa*.

We then conduct multivariate analysis using a linear regression. Three separate models are conducted, one for each of the outcomes of interest (desires, expectations, difference between desires & expectations). We use the same independent variables as for the bivariate analysis, however we run the models separately for men and women to investigate whether the effect of the independent variables is different for men and women, and also to control for the possibility of sex differences in the way that questions are answered.

[16] This question was asked as part of the self-completion questionnaire. Missing is included as a category so that respondents who did not return the self-completion questionnaire could still be included.

Change in desires and expectations for childbearing over time

Following the description of associations with desires and expectations at one point in time we move on to the longitudinal analysis. We start with a description of the pattern of change in desires and expectations over time. We then conducted multivariate analysis in the form of fixed effects models to investigate changes in desires and expectations over time. We are particularly interested in how changes in life events, such as relationship changes, affect individuals stated desires and expectations.

Fixed effects models focus exclusively on variation within people over time, discarding information on variation between people (Allison 2005). This loss of information regarding between-person variation leads to higher standard errors and less efficiency. However, an advantage of fixed effects methods is that they provide unbiased estimates in cases where there is unobserved heterogeneity, where time-invariant unobserved characteristics that vary between individuals are correlated with the predictors.[17] [18]

Fixed effects methods can be estimated by taking deviations at each observation from the individual's means. For all the independent as well as the dependent variables, the mean value averaged across all the points of observation for each particular individual are taken and at each time point the deviations are subtracted from this mean.

$Y_{it} = \beta_i X_{it} + a_i + u_i$ where a_i is the constant or fixed effect of being in state i. (3)

While this controls for unobserved characteristics a_i which are constant over time, it unfortunately also removes observed characteristics such as sex which are also time invariant. While no estimates can be produced for time invariant variables, such as sex, they are nevertheless controlled for in the model.

[17] Heiland et al. (2008:138) note an example would be that some individuals attach a particularly high value on family life (unobserved personality characteristic) and these individuals may also be more likely to get married than the average person. Not controlling for this unobserved heterogeneity would then bias the estimates for the relationship between fertility desires and being married.

[18] Hausman tests also confirmed the appropriateness of using a fixed effects approach rather than a random effects specification for the desire and expectation models.

Results

Cross-sectional

At the time of their first observation, the childless respondents in the sample displayed a high desire for children (Mean=7.1). Expectations were generally slightly lower than desires, but they were still high at an average score of 6.7. On average there was a 1 point difference between stated desires and stated expectations and in just over 60 per cent of observations, the score given for childbearing desire and childbearing expectations was exactly the same, as shown in Table 1. If there was a difference between desires and expectations, in around three-quarters of the time it was because desires exceeded expectations rather than the other way around.

The scores for desires and childbearing generally followed a similar pattern. For the first six variables in Table 1, the differences in desires and expectations were minimal. On average, men, those with less than Year 12 education, those born in other English speaking countries and those with lower levels of religiosity had slightly lower desires as well as expectations. While these characteristics were associated with slightly lower desires and expectations they did not translate into a larger gap between desires and expectations.

Turning to the variables we classify as acting as enablers or constraints, we see that age in particular has a strong relationship with both the overall level of general childbearing desires and expectations, as well as with the gap between the two measures. with increasing age both the mean desire and expectation score decreased, whereas the gap between the two measures increased. Respondents aged 35-39 were the most likely to report desires that were higher than their expectations of childbearing (46 per cent).

Single people also had slightly lower childbearing expectations than their married and cohabiting peers, and they were more likely to have a desire score that was higher than their expectation. Poor health, being unemployed or out of the labour force, as well as dissatisfaction with finances were similarly associated with lower desires, lower expectations and a larger gap between desires and expectations.

However, since these results are from cross-sectional data it is not possible to tell whether these effects are due to selection or not. For example, since only childless individuals are included in our sample, it is possible that those who are in their late 30s or early 40s include a high proportion that do not, and may never have wanted children.

Table 1. Mean scores for desire for children, expectation of childbearing and difference between the two measures, by selected characteristics (Time 1)

	Desire for children	Expectation of childbearing	Absolute difference between desires & expectations	Desire > expectation	Desire= Expectation	Desire< Expectation	N
	Mean	Mean	Mean	%	%	%	
Sex							
Male	7.0	6.5	1.0	29	58	13	2,559
Female	7.4	6.9	0.9	27	62	11	2,258
Highest education level							
University	7.1	6.6	0.9	32	57	11	979
Diploma/certificate	7.2	6.6	1.1	29	59	12	1,077
Year 12	7.6	7.3	0.9	27	61	13	1,729
<Year 12	6.5	6.0	1.1	26	61	13	1,032
Country of birth							
Australia	7.2	6.7	1.0	30	60	10	4,027
Other English speaking	6.3	5.7	0.9	28	62	10	310
Other non-English speaking	7.3	7.0	1.0	24	63	13	479
Number of siblings							
No siblings	7.2	6.8	1.1	27	59	14	806
1 siblings	7.1	6.7	0.9	29	60	11	1,243
2 siblings	7.2	6.7	0.9	30	61	9	1,341
3+ siblings	7.1	6.6	1.1	30	61	9	1,427
Importance of religion							
Important	7.5	6.9	1.0	30	60	10	1,038
Somewhat important	7.3	6.7	1.0	31	60	9	878
Not important	6.8	6.2	0.9	29	60	10	2,604
Missing	7.6	7.2	0.8	24	63	13	297
Attitude towards male breadwinner model							
Agree	7.1	6.6	1.1	27	60	13	418
Mixed feelings	7.2	6.7	1.1	28	59	13	1,592
Disagree	7.0	6.6	1.0	28	60	12	1,901
Missing	7.3	6.8	0.9	28	61	12	906

Table 1 (continued) . Mean scores for desire for children, expectation of childbearing and difference between the two measures, by selected characteristics (pooled cross-sectional)

	Desire for children	Expectation of childbearing	Absolute difference between desires & expectations	Desire > expectation	Desire= Expectation	Desire< Expectation	N
Enablers/Constraints							
Age group							
18-24	7.7	7.5	0.8	24	62	15	2,787
25-29	7.7	7.2	1.0	30	58	12	880
30-34	6.9	6.0	1.1	34	59	7	554
35-39	5.2	3.7	1.8	46	47	7	329
40-45	3.1	1.8	1.6	33	61	6	267
Relationship status							
Single	7.1	6.5	1.0	30	58	13	3,184
Married	7.1	7.1	0.9	26	61	13	1,064
Cohabiting	7.5	6.7	0.9	25	64	11	568
Self-rated health							
Excellent	7.3	6.9	0.8	26	64	10	905
Very good	7.5	7.2	0.9	29	61	10	1,816
Good	7.3	6.9	0.9	31	59	10	1,204
Fair/Poor	6.9	6.3	1.1	37	54	9	377
Missing	6.2	5.3	1.5	28	62	10	515
Economic activity							
Working	7.3	6.8	1.0	29	60	11	3,921
Unemployed	6.9	6.6	1.1	24	58	18	366
Not in the labour force	6.4	6.0	1.0	23	61	16	530
Satisfaction with finances							
Dissatisfied	6.8	6.2	1.2	34	56	10	1,187
Neither satisfied nor dissatisfied	6.9	6.4	1.0	31	59	10	742
Somewhat satisfied	7.4	6.9	0.9	30	60	11	1,589
Satisfied/Very satisfied	7.4	7.0	0.8	25	65	9	1,297
Total	**7.2**	**6.7**	**1.0**	**28**	**60**	**12**	**4,815**

source: HILDA Wave 1(2001)

To further investigate the correspondence between desire and expectations, each measure was grouped into three categories: low (score of 0-3), medium (score of 4-7) or high (score of 8+), and the two measures were cross-tabulated (Table 2). Again we observe that the overall correspondence between desires and expectations for childbearing was high. Over 90 per cent of those with a low desire for a child also had a low expectation of having a child. Similarly 86 per cent of those with a high desire for a child also had a high expectation that they would have a child. It was rare for a high desire for a child to be matched with a low expectation for childbearing or *vice versa*.

Table 2. Correspondence between desires and expectations (pooled cross-sectional)

	Desire		
	Low (0-3)	Medium (4-7)	High (8+)
Expectation	%	%	%
Low (0-3)	91.4	20.1	3.6
Medium (4-7)	6.1	64.0	10.4
High (8+)	2.5	15.9	86.1
Total %	100.0	100.0	100.0
Person-year observations	4,607	3,837	13,190

source: HILDA Wave 1-8 (2001-2008)

The cross-sectional relationship between desires and expectations was further investigated using linear regression of the observations at Time 1 (Table 3). In interpreting the results for the absolute difference, a positive coefficient indicates a larger gap or absolute difference between desires and expectations (compared to the reference category) whereas a negative number indicates a smaller gap. The pattern of results by the selected demographic characteristics is very similar to the bivariate analysis, with the two most important predictors of both desires and expectations being age and relationship status.

Men and women with less than Year 12 education[19] have significantly lower childbearing desires and expectations, compared to those with Year 12 education.

[19] Having a Year 12 education is equivalent to completing secondary or high school, and is equivalent to twelve or thirteen years of schooling depending on which state the person was schooled.

However there does not appear to be any consistent educational patterns on the gap between desires and expectations.

For women, being born in an English-speaking country outside of Australia was associated with lower desires and expectations for childbearing. Conversely men born in a non-English speaking country had higher childbearing expectations than men born in Australia. A larger number of siblings is associated with higher desires for childbearing among women, but not men. Religiosity is important in predicting desires and expectations for both sexes, but it does not explain the difference in the gap between desires and expectations. Finally more egalitarian gender role attitudes had a small effect in explaining lower desires and expectations for women.

Turning to the enabling or constraining variables we see that these have much greater predictive power in explaining both the overall level of childbearing desires and expectations, as well as the absolute difference between the two measures. The relationship between age and both desires and expectations is strongly negative for both sexes, with older men and women having significantly lower desires and expectations compared to younger individuals. The gap between desires and expectations also appears to widen with age, and the effect is slightly stronger for women. In terms of relationship status, we observe that married and cohabiting individuals are significantly more likely to have high desires and high expectations compared to their single counterparts. They are also more likely to have a smaller absolute gap between their desires and expectations, compared to single individuals.

Poor self-rated health was a relatively important predictor of lower desires and expectations of childbearing for both sexes. Men and women with fair or poor health were also had a significantly larger gap between desires and expectations compared to their peers with very good health.

Compared to respondents who are working, men and women who are out of the labour force have significantly lower desires and expectations of childbearing. For men being out of labour force is associated to a significantly smaller gap between desires and expectations. Finally, less satisfaction with finances was associated with lower

childbearing expectations for men, and a larger gap between desires and expectations for both sexes.

Table 3. Linear regression of desires, expectations and difference between desires and expectations (Time 1)

	Desires		**Expectations**		***Difference***	
	Males	Females	Males	Females	Males	Females
Highest education						
University	-0.02	-0.07	0.22	-0.09	-0.16	0.02
Certificate	0.05	-0.31*	-0.07	-0.29*	0.13	0.16
Year 12 (ref)	-	-	-	-	-	-
<Year 12	-0.52***	-0.70***	-0.62***	-0.59***	0.15*	0.01
Country of birth						
Australia (ref)	-	-	-	-	-	-
English speaking	0.00	-0.80***	0.07	-0.85***	-0.19	-0.15
Other non-English speaking	0.36*	-0.43**	0.59***	-0.13	0.00	-0.03
Number of siblings						
None (ref)	-	-	-	-	-	-
1	-0.02	0.28	-0.02	0.14	-0.24**	-0.09
2	-0.02	0.49**	0	0.36*	-0.29***	-0.14
3+	0.07	0.61***	0.08	0.32*	-0.16	-0.03
Importance of religion						
Important (ref)	-	-	-	-	-	-
Somewhat important	-0.35*	-0.23	-0.38*	-0.27	0.01	0.14
Not important	-0.85***	-0.52***	-0.74***	-0.50***	-0.02	-0.06
Missing	-0.22	-0.63**	-0.07	-0.73**	0.00	-0.05
Attitude towards male breadwinner model						
Agree	0.05	0.11	0.19	-0.13	-0.07	0.18
Mixed feelings (ref)						
Disagree	-0.05	-0.46***	-0.11	-0.26*	-0.11	0.04
Missing	-0.09	0	-0.07	-0.11	-0.05	0.09

Table 3 (continued). Linear regression of desires, expectations and difference between desires and expectations (Time 1)

	Desires		**Expectations**		***Difference***	
	Males	Females	Males	Females	Males	Females
Enablers/Constraints						
Age						
18-24	1.07***	1.30***	2.02***	2.10***	-0.60***	-0.45***
25-29	0.65***	1.02***	1.11***	1.25***	-0.29**	-0.03
30-34 (ref)	-	-	-	-	-	-
35-39	-1.24***	-1.92***	-1.66***	-2.77***	0.29*	0.84***
40+	-3.21***	-3.83***	-3.39***	-4.54***	0.04	0.65***
Relationship status						
Single (ref)	-	-	-	-	-	-
Married	0.85***	0.63***	1.43***	1.15***	-0.30**	-0.48***
Cohabiting	0.84***	0.49***	1.43***	0.79***	-0.28***	-0.26***
Self-rated health						
Excellent	0.32*	-0.03	0.32**	0.04	0.04	-0.02
Very good (ref)	-	-	-	-	-	-
Good	-0.19	-0.22	-0.33**	-0.28*	0.14	0.05
Fair /Poor	-0.41	-0.52**	-0.65***	-0.87***	0.33**	0.52***
Missing	0.09	-0.08	-0.04	0.22	-0.04	-0.17
Main activity						
Working (ref)	-	-	-	-	-	-
Unemployed	-0.57**	0.00	-0.23	-0.10	-0.01	0.09
Not in labour force	-0.95***	-0.51**	-0.62***	-0.44**	-0.1	0.06
Satisfaction with finances						
Dissatisfied	-0.1	-0.24	-0.25	-0.31*	0.22**	0.08
Neither satisfied nor dissatisfied	-0.41**	-0.24	-0.39**	-0.28	-0.04	0.19*
Somewhat satisfied (ref)	-	-	-	-	-	-
Satisfied/Very satisfied	0.17	0.11	0.25*	0.22	-0.10	-0.16*
Constant	7.16***	7.20***	5.87***	6.20***	1.62***	1.21***
Number of respondents	2557	2256	2557	2256	2557	2256
Prob>F	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Adj. R-squared	0.16	0.19	0.25	0.31	0.04	0.06

source HILDA Wave 1(2001)

Longitudinal results

The pattern of responses given over time to the question on desires for children and expectation of childbearing were examined by inspecting whether or not an answer given in one particular wave was lower, the same, or higher than the answer given in the previous wave. This gives us some idea of how stable responses are over time, and whether or not desires and expectations tend to change in the same direction. The most common pattern over time was for answers to both the desire and the expectation questions to stay exactly the same as the previous year (Table 4). The next most common pattern was either for both desires and expectations to change in the same direction, with both either being higher or lower than in the previous wave.

In less than seven per cent of cases did the two measures go in opposite direction. That is, it was rare for someone to report having a higher desire for children but a lower expectation than in the previous wave, or to have a higher expectation but a lower desire than in the previous wave.

Table 4. Pattern of change over time

Desires	Expectations	N	%	Average divergence
Same	Same	4,507	28	0.0
Increase	Increase	3,049	19	-0.3
Decrease	Decrease	2,852	18	-0.1
Same	Decrease	1,331	8	2.0
Same	Increase	1,266	8	-2.0
Decrease	Same	925	6	-2.1
Increase	Same	898	6	2.1
Increase	Decrease	636	4	3.7
Decrease	Increase	548	3	-3.8
Total person years		16,012	100	

source HILDA Wave 1-8 (2001-2008)

The result of the fixed effects regression on desires, expectations and the difference between desires and expectations are shown in Table 5. The results for the difference between desires and expectations can be interpreted as follows: a negative difference indicates a convergence between desires and expectations, that is, individual

scores become closer together; a positive difference indicates a divergence between desires and expectations.

It is noticeable that the two factors which people have to least control over, ageing and partnering, are the factors associated with convergence. The interaction between age and time indicates that compared to the reference group aged 30-34, young men and women aged under 30 are more likely to experience an increase in childbearing desires over time, whereas those aged in their late 30s are more likely to experience a decrease in desires over time. Consistent with hypothesis H1a, women aged in their late 30s or in their 40s are more likely to experience a convergence between desires and expectations over time, compared to women in their early 30s. No significant relationship between age and the difference between desires and expectation was evident for men.

Changes in relationship status over time had a fairly significant effect on changes in both desires and expectations of childbearing, as well as on the gap between these two measures. A change from being single to married or cohabiting was associated with an increase in desires and expectations as well as a convergence between the two measures for both sexes. The is consistent with hypothesis H2a

We also hypothesized that experiencing a 'shock' would have an effect on desires and expectations (H3a-H3c), however this was not confirmed in the longitudinal model. In fact instead of being associated with convergence, we saw that these circumstances had the effect of widening the gap between desires and expectations leading to divergence. The following patterns for health, labour force status and financial dissatisfaction are noted.

Worsening self-rated health was associated with a decline in expectations for both men and women, but the effect on desires was much less consistent. For women a change to fair or poor health was also associated with increased divergence between the two measures, that is, expectations fell more than desires did.

A change in activity from working to not in the labour force was associated with a decline in both desires and expectations for men, but it had no effect on the difference measure suggestion that the decline affected both measures similarly.

Dissatisfaction with finances was associated with a decline in desires, but the effect was even stronger for expectations. Increased dissatisfaction was also associated with a greater gap between desires and expectations, suggesting that fall in expectations was not matched by an equally large fall in desires.

Finally changes in education level and in particular an increase in education level from Year 12 to diploma was associated with a decline in desires for both men and women.

We suggest that desires do not follow expectations for these life events because people may perceive that they have more control over them, at least in comparison to getting older and finding a partner. In some respect these events can be seen as temporary circumstances: health conditions in these age groups are often acute events that while severe, may not last; so too for financial situation, where people may temporarily find themselves in short-term difficulty. A way out can often be seen, or at least hoped for.

These findings suggest that desires only change when the prospect of expectations matching desires falls away, i.e. when it becomes clear that they are unlikely to have a child. Desires do not seem to respond to short-term stocks. This is consistent with cognitive dissonance theory, which suggests that individuals will respond with goal disengagement when faced with the reality of their circumstances.

Table 5. Within person change in desires, expectations and difference between desires and expectations over time (Fixed effects model)

	Desires		Expectations		Absolute difference		
	Males	Females	Males	Females	Males	Females	
Time	-0.08***	-0.16***	-0.06**	-0.21***	-0.05***	0.03	
Age group * Time							
18-24	0.10***	0.19***	0.05	0.16***	0.03	-0.02	
25-29	0.08**	0.17***	0.04	0.17***	0.04	-0.04	
30-34	-	-	-	-	-	-	
35-39	-0.11***	-0.16***	-0.12***	-0.04	0.01	-0.14***	convergence
40+	0.02	-0.16*	0.07	0.04	-0.08	-0.24***	convergence
Relationship status							
Single							
Married	0.70***	0.66***	0.99***	1.04***	-0.19**	-0.30***	convergence
Cohabiting	0.36***	0.39***	0.67***	0.70***	-0.16***	-0.24***	convergence
Self-rated health							
No response	0.09	-0.03	-0.08	-0.02	0.14***	0.03	
Excellent	0.18***	0.01	0.09	-0.02	0.07	0.04	
Very good	-	-	-	-	-	-	
Good	0.02	-0.06	-0.01	-0.14**	0.02	0.07	
Fair/Poor	-0.08	-0.17*	-0.27***	-0.46***	0.13*	0.28***	divergence
Activity							
Working	-	-	-	-	-	-	
Unemployed	-0.19*	0.00	-0.1	-0.01	-0.01	0.04	
Not in labour force	-0.28***	0.08	-0.22**	0.13	-0.08	0.00	
Satisfaction with finances							
Dissatisfied	-0.03	-0.01	-0.12*	-0.15**	0.12**	0.12**	divergence
Neither satisfied nor dissatisfied	-0.13**	-0.08	-0.18***	-0.24***	0.06	0.16***	divergence
Somewhat satisfied	-	-	-	-	-	-	
Satisfied/Very satisfied	0.03	0.14***	0.08	0.10*	-0.03	0.00	
Education							
University	-0.25*	-0.17	-0.19	-0.14	0.04	0.04	
Diploma/certificate	-0.35**	-0.03	-0.36***	-0.02	0.04	0.14	
Year 12	-	-	-	-	-	-	
< Year 12	-0.26	-0.43**	-0.30*	-0.40**	0.09	0.06	
Constant	6.99***	7.27***	6.45***	6.82***	1.02***	0.91***	
Number of observations	11,644	9,984	11,644	9,984	11,644	9,984	
Number of respondent	2,559	2,258	2,559	2,258	2,559	2,258	
Prob>F	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Fraction of variance due to person level	0.69	0.73	0.71	0.74	0.39	0.43	

source HILDA Wave 1-8 (2001-2008)

Conclusion

This paper has examined the relationship between childbearing desires and childbearing expectations, both cross-sectionally as well as over time. The central aim was to investigate how similar childbearing desires and childbearing expectations are; whether they reflect two distinct concepts, or whether they operate in parallel ways and are influenced by the same situational factors. The former view, that desires represent a person's inherent wish for children, regardless of situational factors and perceived constraints, is frequently encountered implicitly and explicitly in the literature and is exemplified by this quote '…you may desire a(nother) child but not intend to have one because you believe you are too old or unable to afford it' (Miller & Pasta 1988:237). According to this view fertility expectations will change as circumstances change, but desires will remain unaffected. The alternative view sees fertility desires and fertility expectations as being inherently linked with both concepts being influenced by the same perceived constraints (Weston & Qu 2004; Holton et al 2011). Psychological mechanisms such as cognitive dissonance posit that the two measures will have a tendency to converge if a desire there is a gap, for example if a high desire for childbearing is not matched with a high expectation that having children in the future is a realistic possibility. People will disengage from their desired goal of wanting children.

The results of our analysis confirm that there is evidence of convergence particularly for life events that there is less control over. The cross-sectional analysis suggests that for this childless sample, constraints such as older age, being single, having poor health led and dissatisfaction with finances are associated with a gap between fertility desires and expectations. This indicates that individuals with these characteristics have expectations that are lower than their desires for childbearing; they may want to have a child but are less optimistic about the ability to achieve their goal. The longitudinal analysis also revealed that poor health and dissatisfaction with finances had a greater negative effect on childbearing expectations leading to a divergence between desires and expectations within individuals. While these results support the view that expectations are more likely to be affected by situational constraints whereas childbearing desires show greater stability, leading to cases where individuals may have a

strong desire for children paired with a low expectations that this will occur, we also find support for the alternative view.

Childbearing desires are affected by the variables we classify as being enablers or constraints. Older age, being single, being out of the labour force and being dissatisfied with one's finances is related to lower expectations, as expected, but also lower desires for childbearing. While the cross-sectional results could be due to sample selection, we do also find support for this conclusion from the longitudinal results as many of the effects seen between people over time, are also important within people over time.

The fixed effects analysis indicated that the effect of time passing had a greater dampening effect on fertility desires and expectations for individuals aged 35 and over. In the two oldest age groups we observed a convergence between desires and expectations over time for women, but not for men. It can be hypothesized that this trend is most likely as a result of desires falling to match the lower expectations as the women experience an increasing realization that there may not be time to have a child, and therefore disengage from that goal.

Convergence between desires and expectations was also evident as a result of positive changes such as getting married or entering into cohabitation. In line with previous research (Qu, et al. 2000; Mitchell and Gray 2007) we find that relationship status is a key determinant of intentions, both at the cross-section and longitudinally. This is not a surprising finding given that for many individuals being in a stable relationship is an important prerequisite for childbearing. The fact that changes in relationship formation were associated with changes in desires provide some support for the proposition that the cross-sectional finding that single individuals have lower desires than partnered people is not only due to a selection effect. It is quite likely that the low desire expressed by some single individuals is a reflection of their current circumstances, rather than an inherent aversion to childbearing *per se* (Qu, et al. 2000; Mitchell and Gray 2007).

We have some suggestions for future research directions. Due to our inclusion of both partnered and unpartnered individuals, we were unfortunately unable to include several key variables such as the partner's desires. Such an omission could be associated with biased estimates. Partners' desires have previously been shown to have a strong

influence on fertility decision making and on the probability of having a future birth (Berrington 2004). It is likely for example, that entering into a new relationship with a partner who has high desires for childbearing will have a different effect on an individual's desires than entering a relationship with someone with very low desires. Similarly, when it comes to further childbearing in established relationships, if there is some disagreement between partners as to whether this is a desirable outcome or not (Voas 2003), the partner with the higher desire may relinquish and lower their desires and expectations over time.

The study provides some insight into the psychology of fertility decision making at the individual level. It is apparent that fertility decision making is a highly complex behavior that is formed in interaction with wider macro-level forces (Mitchell & Gray 2007). As Merlo and Rowland (2000) argue, the role of factors such as relationship difficulties or inability to find a partner, financial constraints and postponement of childbearing in influencing childbearing has made it very difficult to separate out and distinguish between voluntary and involuntary childlessness. A better understanding of why or why not fertility preferences are translated into actual behavior, and an understanding of how desires for children change dynamically over the life course is key to understanding current fertility patterns and to devising effective policies. This research concludes that desires do change when expectations are permanently dampened, but they do not respond to short-term shocks.

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