Partners' disagreement inhibits childbearing: a couple level analysis in Australia

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Abstract

Demographers have studied pregnancy intentions and subsequent births focusing on women or combining women's reports with their subjective perception of partners' intentions. Reproductive decisions are dyadic and as such require a couple level investigation. Drawing on data from the survey "Household Income and Labour Dynamics in Australia" (HILDA), we investigate the intention-outcome fertility link in a genuine couple approach. The aim is to find out whether one of the partner drives the decision process if conflict raises and whether the ultimate effect of disagreement is in favour or against a childbirth. Results show that partners' divergent views about having a first or an additional child have a detrimental effect on a childbirth but the extent of such an effect is gender and parity specific. Women have a prevalent voice in the resolution of disagreement if they plan to have a child. Couple disagreement is located somewhere between agreement on yes and agreement on not among childless couples while it is shifted more towards agreement on not among couples who have already children consistently with a double veto model. Women's stronger negotiation power in reproductive decision-making is not driven by their bigger contribution to the household income nor by their higher satisfaction about the gender division of childcare tasks.

Keywords:

Reproductive decision-making, birth intentions, Australia, couple disagreement, couple-level analysis

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Introduction

Childbearing requires a dyadic decision and behaviour. Nevertheless, studies in family demography have still an emphasis on woman's perspective since women are the main actors and the most reliable reporters of childbearing events. A couple-oriented approach has been adopted in a few studies (Fried and Udry 1979; Beckman et al. 1983; Morgan 1985; Thomson 1997; Thomson and Hoem 1998; Jansen and Liefbroer 2006; Miller and Pasta 1996; Miller, Severy, and Pasta 2004; Testa 2012). S ome of these studies have shown that models based on both partners' fertility intentions are superior to those based on only one partner's intentions (Fried and Udry 1979; Fried, Hofferth, and Udry 1980; Morgan 1985) and that models based solely on women's intentions are likely to be misspecified (Corijn et al 1996). Furthermore, longitudinal household surveys have only rarely been conducted in recent decades. Couple-level research requires high-quality survey data that include information on both partners, possibly in repeated waves. These data are indispensable for ascertaining the differences between partners' reproductive goals and identifying the contribution of each partner to the birth outcome.

We address the topic of fertility decision-making in Australia using longitudinal couple-level data stemming from the Household, Income and Labour Dynamics in Australia (HILDA) survey. We address several questions in the paper. In a context of high fertility control, is one partner's intention not to have a child sufficient to prevent a birth? Does socioeconomic gender equality as measured by partners' contribution to the household income correspond to a better gender equality in fertility decision-making? Is the resolution of couple disagreement in reproductive decision-making gendered? If yes, which criteria are behind the gender differences in the implementation of fertility decisions?

In Australia the intended number of children among men and women in key childbearing ages (20-44 years) is on average 2.25 (Keygan 2017) but the completed fertility of most recent cohorts born in 1967-1971 is 1.98, that is, below the replacement level of 2.1 (Zeman et al 2017). These discrepancy gives rise to a so called fertility gap, a gap between intended and achieved births (Harknett and Hartnett 2014), the magnitude of which varies along the urban-rural divide given the important regional differences in fertility levels between urban and rural areas (Gray and Evans 2018).

In this paper we look at the reason behind such a discrepancy in a country in which contraception is widely used (Gray and McDonald 2010) and low fertility is combined with low gender equality in the family and in the market (McDonald 2013). First, we seek to understand whether the parenthood norm strengthens the decision-making power of the partner who supports the achievement of this target. Second, we attempt to clarify whether couples in which the two partners are equally involved in childbearing tasks and in producing household income share more equally the decision to have a first child or another child (hereafter, a child). Third, we aim at investigating whether one partner's intention not to have a child is sufficient to prevent a birth in a context of large use of modern contraception methods. The dyadic perspective enables us to investigate how partners' characteristics ultimately affect couple's childbearing behavioural outcomes and allows us to study whether partner effects are moderated by diverging bargaining power within partnerships. It will be shown that the data fully

support the dyadic approach of fertility and reproductive decision-making pointing to significant partner effects in the decision-making process of couples.

Theory and literature

A theory of fertility and reproductive decision-making is missing. Studies of birth intentions use either theories of fertility or borrow theoretical framework from other discipline like sociology or social psychology. The theory of planned behaviour (Ajzen 1991) sees intentions as being formulated under the influence of three groups of factors: (a) personal positive and negative attitudes toward the behavior; (b) subjective normative beliefs—that is, perceived social pressure to engage or not to engage in the behavior; and (c) perceived behavioral control—that is, the ability to perform the behavior, which may depend, for example, on the availability of housing, income, or other resources. Applied to the field of fertility (Billari et al 2009; Dommermuth et al 2011), the theory implicitly assumes that the perception of a disagreement with one's partner about having a child influences an individual's normative beliefs. An individual who intends to have a child and who perceives that his or her partner does not share this wish is likely to form the belief that the partner does not want her/him to have a child. This perception may influence the individual's own fertility intentions. For example if the couple has no children and one of the partners intends to have a child, the partners who does not want to have a child may be more responsive to a partner's disagreement because of the perceived social pressure to become a parent. Because the theory of planned behavior incorporates the partner's intentions only through the subjective normative belief component, it is more suitable for studies focusing on the target person's perception of his or her partner's view (i.e., couple analysis based on individual-level data; e.g., Testa 2012). But it can be useful adapted to the study of couple disagreement. A common conception is that the link between intentions and behavioural goal can be interfered by incomplete control over the behavioural goal, thus disrupting the transition from the intentional decision stage to actual behaviour (Ajzen and Madden 1986). In this context, it has been shown that partners' disagreement about having a(nother) child hinders the realization of birth intentions (Testa et al 2014).

The traits-desires-intentions-behavior theory (Miller 1986, 1994) explicitly considers the dyadic nature of reproduction, the disagreement effects of a couple's decisional conflicts (Miller and Pasta 1996), and the interaction between the partners at each stage of the sequence (Miller, Severy, and Pasta 2004). According to the theory, fertility intentions are desires constrained by reality—a conscious commitment to act in a certain way or to achieve a certain goal at some future time. The eventual goal of reproductive behaviour is to achieve or avoid a pregnancy. Intentions are assumed to incorporate the perception of the desires of significant others, above all the partner, as well as other factors that may prevent individuals from doing what they want to do. Miller and Pasta (1996) identified two main components of couple disagreement: the signed difference or influence effect, which depends on which of the two partners has more influence on the behavior; and the absolute difference or conflict effect, which is independent of the desires of either partner. The conflict effect produces a delay in fertility decision-

making due to inertia, which tends to favour the partner who does not intend to have a child in a context in which using contraception between births is standard practice (Davidson and Beach 1981; Beach et al. 1982). The influence effect may also produce a delay in fertility if a double veto-power model is at work within the couple (Thomson et al 1990; Thomson 1997; Thomson and Hoem 1998; Voas 2003), which also requires that the two partners concur in their views before action is taken.

Similar to classic economic theory (Becker 1981) in the bargaining theory relative decision weights in childbearing decision-making are assumed to be moderated by resource allocation within partnerships. Bargaining theory also considers a veto option of the weaker partner in the case of anticipated losses in bargaining power due to move (Lundberg and Pollak 1996; 2003). If the two partners differ in their birth intentions, whether the number of children or the timing of fertility, they try to reach a decision midway between the preferences of the two (Thomson 1997; Thomson and Hoem 1998; Thomson et al 1990; Jansen and Liefbroer 2006). A key issue concerns the criteria adopted by the couple to solve the conflict and whether one partner drives the decision process. Some criteria are based on the sex of the partner, others on the level of equality within the couple. The power heuristic, for instance, predicts that the partner who has greater access to socio-economic resources prevails. As long as men have higher occupational and income levels than women, they will predominate in the couple's negotiation process. Male prevalence is also expected under the "patriarchal" regime. By contrast, the sphere of interest principle envisages that the partner in whose sphere of interest a decision is located will have greater influence over subsequent behaviour. As long as childbearing tends to lie in the female sphere of interest, women will be more influential in the couple's fertility decision-making. This is the most likely scenario in Australia, where male breadwinners is the prevalent model and women have a primary responsibility for childrearing tasks (Baxter et al 2008).

Gender equality in fertility decision-making is envisaged in two decision-making heuristics: the golden mean and the social drift approaches. According to the golden mean, partners view each other's intentions as equally important, and since they have equal negotiating power, they will try to strike a compromise that equally reflects their initial desires. In case of disagreement about short-term birth intentions, a compromise could be the birth of a child later than in the next three years. This way of engaging in fertility decision-making would primarily result in a postponement of childbearing. Previous studies suggest that gender equality dominates partners' interaction in decision-making process in several affluent countries (Jansen and Liefbroer, 2006, for the Netherlands; Thomson, 1997, for the US; Thomson and Hoem, 1998, for Sweden; Bauer and Kneip, 2013, for Germany; Testa, Cavalli and Rosina, 2014, for Italy). According to the social drift heuristic, the status quo will be maintained by favouring the partner who does not intend to have a child if the use of contraception between births is routine. Neal and Groat (1980) demonstrated that women who perceive their broader environment as being unpredictable develop a lifestyle characterized by social drift, and they respond to events like pregnancy as they happen, rather than deliberately causing them to occur through their own effort. In a qualitative study on birth intentions this group would match the category of indifferent individuals, i.e.,

those who do not express a birth intention but do not rule out the possibility to have a child either and maintain a non-committed attitude towards childbearing (Bernardi et al 2015).

Research questions

Before considering the specific research hypotheses, we clarify the terminology used. In the field of fertility intentions subtle differences in the terms used might imply big differences in the conceptual and analytical setting. This research considers intentions as "psychological states that represent what someone actually plans to do"; hence they are "desires constrained by reality" (Miller 1994:228). As commitment to act, intentions have to be treated as distinct from preferences, desires and expectations. Even more, as time- and parity-specific intentions of both partners, they are presumably the most realistic measure of behavior. Behavioural intentions do better correspond to behaviour if they are specified in their target (child of a given birth order), context (partner at the time of the first survey) and time (short term period of three years within which the birth is planned) (Ajzen and Fishbein 1977). Partnership and parity status as well as the specification of a short temporal frame have been identified in the literature as key factors improving the accuracy in the predictive strength of birth intentions (Barber 2001; Rackin and Bachrach 2016; Dommermuth et al 2015).

Given that Australian women have a major role in childrearing tasks and they are still the main child care giver within the couple (Baxter et al 2008), we can expect that women have more influence on childbearing decisions than men do. Consistently, if partners do not agree about having a(nother) child a childbirth would be more frequently observed if the woman but not the man intends to have a child than the other way around (*signed effect of disagreement*).

Research has shown that among dual-earner couples the intra-household distribution of bargaining power has become an important predictor of fertility decisions of spouses with divergent interests (Jansen and Liefbroer 2006). Partners who have the same level of bargaining power can be expected to exert the same degree of influence on childbearing decisions so that if the conflict raises, the status quo will be maintained and none of the partners will prevail. Alternatively, the intention of the partner with more bargaining power will be realised (*bargaining power effect*).

Moreover, because the use of contraception between births is the prevalent regime, conceiving a child requires a change in the couple's standard behavior (i.e., contraccepting) and thus would favour the partner who does not intend to have a child (Davidson and Beach 1981). Hence, partners who disagree about having a child will be less likely to have a child than partners agreeing on having a child because the one who does not want a child (no matter whether the female or the male partner) exerts a veto on the decision of the other (*double veto-power effect*).

We believe that examining birth intentions and outcomes in a dyadic context is of a paramount importance for understanding the reasons why birth intentions do not always match the subsequent outcomes. To the best of our knowledge, this is the first study ever addressing the issue of partners' negotiation and couple fertility choices in Australia.

Data, measures and models

The analyses are performed using longitudinal data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. HILDA is a nationally representative household-based panel study. The study collects information yearly on different aspects of life from each person aged 15 and older living in the household at the time of the interview. The identical set of questions were addressed to both partners, which allows us to conduct a fully comparative analysis of the responses within the couple. Following the dyadic nature of reproductive decision-making we used couple-level data. At baseline (2001), 13,969 persons from 7,682 households have been interviewed. In 2011, a top-up sample of 2,153 households have been added.[1] Information on fertility intentions has been asked in 2005 (wave 5), 2008 (wave 8), 2011 (wave 11) and 2015 (wave 15). These survey's rounds contain a panel of questions on fertility which were asked as part of an international comparative survey, the Generation and Gender Programme (GGP)[2]. At the time of writing this paper the last available data refers to 2016 (Wave 16). Since we focused on the realization of the fertility intention i.e., having a baby within three years from the time of the interview at which the birth intention had been expressed; birth intentions collected in 2015 – which lack information on birth outcomes in the following three years -- were excluded.

Target sample

To select the suitable sample we pooled together the HILDA data from the waves conducted in 2005, 2008 and 2011, ending up with 6,981 heterosexual couples; i.e., people married or in a de facto relationship living together at the time of the interview. Out of several waves we decided to select for the study only these three because only in these three waves individuals were asked about their childbearing intentions within the following three years, which is the focus of this research. Although the HILDA survey was administered to every member of the household aged 15 and older, the questions on fertility intentions were restricted to male respondent aged less than 55 and female respondent aged less than 45. In addition, the question on birth intentions was not asked if the respondent or the partner reported difficulties in having a child for medical reason. Since we focus on couples, we retain only those couples in which both partners reported valid information on fertility intentions and who were not pregnant at the time of the interview. The final target sample was cut down to 1,329 couples for a total number of 1,845 observations. Among these 1,845 observations, 108 (5.85%) lacked information on the fertility history of the couple in the next three years, 97 (5.26%) referred to couples experiencing a partnership disruption during the time span considered,[3] and 18 (0.97%) referred to couples reporting

[1] For further details on HILDA survey, please refer to Watson and Wooden (2002).
[2] The fertility module contains information about fertility histories, pregnancies, contraception and fertility intentions, which are used in this paper to understand patterns of contraceptive use.
[3] Among these couples, 73 did not experienced any childbirth in the observation period and 24 had a childbearing experience i.e., one of the partners had a child with a new partner.

inconsistent information about childbearing and partnership disruption. We excluded all three these categories. As such, the final analytical sample consists of 1,598 observations; i.e., 1274 couples, of which 754 (59%) childless and 520 (41%) with at least one child (Table 1).

Table 1. Distribution of observations per couple

	N of respondent	**%**
One observation	1,124	70.34
Two observations	390	24.41
Three observations	84	5.26
Total	1,598	100.00

Note. Only couples who were under study for the whole period of observation are listed under 'three'

Measures

Birth of a child. The dependent variable is a dichotomous variable indicating the birth of a child. This has been considered as a positive childbearing outcome (equal to one) only if occurred within three years from the interview at which the intentions to have a(nother) child was expressed. The explanatory variables include birth intention, measure of gender equality within the couple and a set of control variables describing the socio-demographic characteristics of the partners.

Birth intentions. Information on fertility intention is included in two different items of the HILDA questionnaire worded as follows: (1) *How many (more) children do you intend to have?* (2) *In what year (do you intend to have the next child)*? If the respondent declared the intent to have a child, she/he was asked about the timing of such an intention. Response options to this question were: *i*) within the next 3 years; *ii*) within the next four/five years; *iii*) within the next 6-10 years; *iv*) unable to answer. Alternatively, the respondent could declare the exact year when she/he intends to have the next child but in this case, we recoded the answer in a dichotomous fashion, i.e., by indicating simply whether the respondent intends to have a child within three years since the date of the interview. Hence, birth intentions of both partners are measured on a binary scale 'yes/no' depending on whether they expressed the intent of having a child in the next three years or not.

Partners' agreement/disagreement about having a child. Couple agreement about having a(nother) child is computed by combining both partners' birth intentions. Four categories are considered: both partners intend to having a child (*agreement on yes*); only the female partner but not the male partner intends to have a child (*signed disagreement in which she only intends*); only the male partner but not the female intends to have a child (*signed disagreement in which he only intends*); neither of the partners intends to have a child (*agreement on not*). This variable is included in the regression models in its long- and short-version, four or three categories respectively. The latter version pools together the two types of disagreement (*absolute disagreement*). Furthermore, a numeric variable ranging from zero (agree on not) to three (agree on yes) is tested in the regression models. The identical questions were addressed to both partners, which allows us to conduct a fully comparative analysis of the responses.

Moreover, all of the items on fertility intentions were included in the self-administered questionnaires, ensuring a high degree of independence in the partners' answers.

Partners' bargaining power. Bargaining power is measured with a 3-category variable indicating whether *i*) both partners contribute equally to the total household income (dual earner couples); *ii*) the female partner contributes at least 60% to the total household income (female breadwinner couples); *iii*) the female partner contributes less than 60% to the total household income (male breadwinner couples). The model control also for household income which is measured as equivalised household disposable total income in 2015 CPI (Purchase Power Parity).

Socio-demographic characteristics. We controlled for several socio-demographic characteristics including age, level of education, marital status, employment status, household income, number of siblings, self-rated health. In addition, we included the state of residence and year of interview, both as fixed effects in the models to control for contextual effects. The woman's age, the only numeric variable, is centered on the rounded mean value of 28 years. An additional three-category variable specifies whether the male partner is younger, older (up to three years), or significantly older (more than three years) than the female partner. The woman's level of education is a three-category variable with low, medium, and high levels, corresponding to levels 0–2, 3–4, and 5–6 of the International Standard Qualification of Education. Two additional dummy variables specify whether the male partner has a higher or lower level of completed education than the female partner. Marital status has two categories: married and cohabiting. Employment status has the following four categories: both partners work, only the man works, only the woman works, and neither partner works (meaning they are either unemployed or out of the labor force). The sample sizes did not permit a more refined breakdown of this variable. Self-rated health status is measured through the following item: "*In general, how do you rate your health?*" Response options are: 'excellent' 'very good' 'good' 'poor' 'fair'. Because of very few 'poor' and 'fair' responses, we merged the two options in one category. Besides age which is usually included as control variable, education, and employment are the explanatory variables typically considered as relevant determinants of reproduction. Marital status has been proved to influence realisation of previously stated birth intentions (Schoen et al 1999) but this effect varies across countries (it is not found in France, for example; see Testa and Toulemon 2006) and depends on the meaning of cohabitation prevalent in the country (Hiekel and Castro-Martín 2014). Number of siblings is used a proxy measure of the family background and cognitive image of family which is an important predictor of birth intentions at the early stage of the life course (Rackin and Bachrach 2016). Health status is indicating whether couples are healthy and in a position to plan a family. Year of interview should grasp any temporal trend that might be linked to a particular conjuncture of the Australian institutional context, such as the introduction of the baby bonus in 2004.[4] State of Residence is used to detect the

[4] Some studies (Risse 2011) suggest that the Baby Bonus introduced by the Australian Government in 2004 had the effect to increase fertility intentions of young women and women in low-income households. This effect was observed in 2005 HILDA data, and, to a lesser extent, in the wave 2008 when the payment level of the bonus was

rural urban divide and the geographical differences. We report the descriptive statistics of all variables included in the regression models in Table 2.

Table 2 Descriptive statistics of the variables used in the regression analysis

	Parity 0		Parity 1+	
Variable	N	Percent	N	Percent
# Couples	754		520	
# Observations	984		614	
Having a child	505	51.32	436	71.01
Partners' combined birth intentions				
Agreement on not	247	25.10	38	6.19
Disagreement: M intends, W does not	77	7.83	28	4.56
Disagreement: W intends, M does not	86	8.74	37	6.03
Agreement on yes	574	58.33	511	83.22
DEMOGRAPHICS				
Age				
Man is younger than woman	40	4.07	22	3.58
Man and woman with same age	676	68.70	382	62.21
Male partner more than 3 years older	268	27.24	210	34.20
Level of education (woman)				
Compulsory education	331	33.64	255	41.53
Certificate or Diploma	244	24.80	145	23.62
Bachelor or above	409	41.57	214	34.85
Level of education (both partners)				
Partners with same level of education	501	50.91	329	53.58
Man more educated than woman	210	21.34	141	22.96
Man less educated than woman	273	27.74	144	23.45
Employment status (both partners)				
Neither partner employed	24	2.44	32	5.21
Only man employed	64	6.50	230	37.46
Only woman employed	32	3.25	9	1.47
Both partners employed	864	87.81	343	55.86
Parity status				
Childless	984	100.0	-	-
One child	-	-	393	64.01
Two children			164	10.26
Three or more children	-	-	57	3.57
Number of siblings				
Both partners have no siblings	105	10.67	36	5.86
At least one partner has 1 sibling	303	30.79	187	30.46
At least one partner has 2 or more siblings	576	58.54	391	63.68
Self-rated health				
Both partners in good health	870	88.41	525	85.50

increased. Some scholar emphasize the marginal and short-term effect of such a policy (Parr and Guest 2011; Keygan 2017).

One of the partners not in good health	114	11.59	89	14.50
Couple economic inequality				
Dual-earner couple				
Female breadwinner	106	10.77	46	7.49
Male breadwinner	878	89.23	568	92.51
Equivalised HH disposable income (mean in AUD)		78,720.11		72,153.06
State of residence				
New South Wales	265	26.93	181	29.48
Victoria	271	27.54	135	21.99
Queensland	207	21.04	165	26.87
South Australia	94	9.55	44	7.17
Western Australia	84	8.54	53	8.63
Tasmania	30	3.05	15	2.44
Northern Territory	10	1.02	8	1.30
Australian Capital Territory	23	2.34	13	2.12
Year of interview				
2005	316	32.11	183	29.80
2008	328	33.33	199	32.41
2011	340	34.55	232	37.79

Model

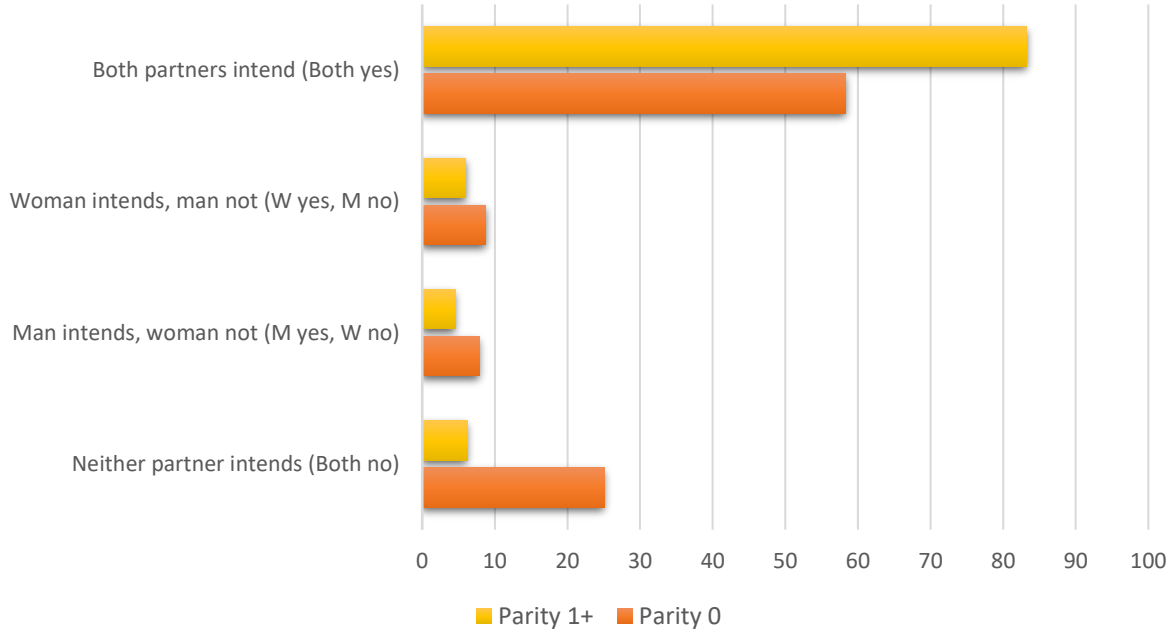
We analysed the birth of a child in the inter-survey period using a model for binary response data (logistic model). The models are run separately for childless and parents, in line with a conditional-sequential fertility decision-making process (Namboodiri 1972; Bulatao 1981) and consistently with the empirical evidence suggesting that the predictors of first births are not necessarily the same as predictors of second or higher birth order child (Philipov et al. 2006; Philipov et al. 2015; Dommermuth, et al. 2011). Furthermore, at later stages in life -- after transition to statuses normally associated with childbearing, like marriage -- intentions are proved to be better predictors of fertility (Rackin and Bachrach 2016). The limited sample size hindered a more refined stratification that could allow a distinction of second child from higher birth order children.

Four model specifications are considered in which the partners' combined birth intentions are coded in a different manner. In the first model we included a 4-category variable which detects not only the disagreement but also the sign of it, i.e., whether she only or he only intends to have a child (*signed disagreement*). In the second model, we included a 3-category variable by merging the two disagreement categories (*absolute disagreement*). In the third and fourth models, we included the disagreement as a continuous numeric variable (*linear effects of disagreement*) with four and three levels, respectively. Table 3 and Table 4 report the estimates of all four regression models (Model 1 to Model 4). The control variables are retained in all models.

Descriptive results

HILDA data show that the proportion of partners' disagreement was higher at the start of childbearing career than at the transition to higher parities: it was 16.57% at parity zero and 10.59% at parity one and above. The cases in which the woman had a birth intention but the man did not were more frequent than those in which the man had a birth intention but the woman did not: for parity zero they were 8.74% and 7.83% respectively; for parents they were 6.03% and 4.56% respectively (Figure 1 and Table 2). Worth to be noted is that the large majority of couples intended to have a child and that partners' agreement on having a child was high among parents (58%) and very high among childless (83%). The very high share of couples intending a child is due to the characteristics of the sample selected for the analysis. We focus on women and men individuals in stable intimate relationships most of which in the prime reproductive ages.

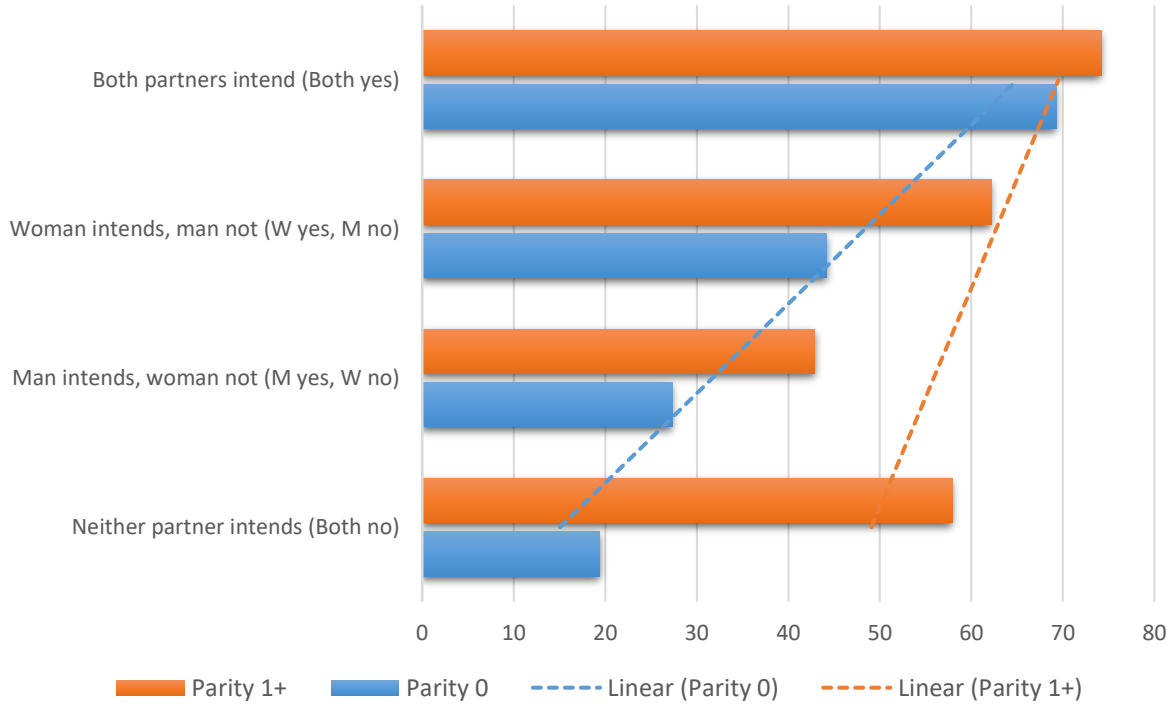
Figure 1 – Couple's fertility intentions by parity at the initial survey wave. HILDA couple-level data.



The disagreement effect changes substantially across parities (Figure 2). At parity zero, the proportion of couples who had a child between the two surveys steeply decreased from 69 percent if the partners agreed on having a child to 19 percent if the partners agreed on not having a child. Among couples who disagreed, 44 percent and 27 percent had a child if only the woman or the man, respectively, intended to have one. Disagreeing couples were in between those who agreed on having a child and those who agreed on not having a child; those in which only woman wanted were closer to agreement on yes (69 vs 44%) and those in which only man wanted were closer to the agreement on not (27 vs 19%). At parity one and above, the share of couples who had a child between 2005 and 2011 declined from 74 percent if the partners had agreed on having a child to 57.9 percent if the partners had agreed on not having a child. The share of childbearing among disagreeing couples was 62 percent if the female

partner had an intention and 42.9 percent if the male partner had an intention. Interestingly, couples in which partners agreed on not having a child had a child (57.9%) more frequently than couples in which the man but not the woman intended to have a child (42.9%). The disagreement effect is matching a hypothetical linear shape more at parity zero than at parity one or above (Figure 2). In this latter group going from agreement on yes to agreement on not the decrease in the share of couples having a child is non-monotonic due to the considerable high share of couples getting a miss-timed birth (57.9). Since this result was quite striking for us we double checked it in the data and we found that the high percentage is mainly driven by those couples who declared not to want a second childbirth who had nevertheless a second child. Above all, the miss-timed births have to be read in light of the small samples sizes we are dealing with and within which only a few couples (38) declared that they did not want to move on higher parities in the short-term period. The fact that most of the couples are followed in their prime reproductive ages might indicate that some of those might have changed their mind since the time of their first interview and might have transitioned to agreement on having a child.

Figure 2 – Percent of couples having a child in the inter-survey period (2005-2011) by short-term fertility intentions and parity. HILDA couple-level data.



Note.

The dotted lines indicate the hypothetical liner effect of partners' combined birth intentions on childbirth

Multivariate analysis

Directional differences of disagreement. To determine whether one of the partners prevailed in the final decision, we examined whether the effect of disagreement was absolute or signed (i.e., directional differences of disagreement). To do so, we estimated a model (Model 1) in which the categories "woman intends but man does not" and "man intends but woman does not" were considered separately (signed disagreement) and compared it with a model (Model 2) in which only one disagreement category (one of the partners does not intend) was included (absolute disagreement). Similarly, we tested the linear effects of disagreement comparing the models in which the two disagreement categories are kept separated (Model 3) or pooled together (Model 4).

At parity zero, the probability of having a child was higher if the woman intended to have a child but the man did not than the other way around (in Model 1 the odds ratio in which she only intends is equal to 3.551 and highly statistically significant; while the odds ratio in which he only intends is 1.549 and not statistically significant). Moreover, the null hypothesis of equality between the two signed disagreement categories has to be rejected at 5% level (P-value: 0.0187). This empirical evidence suggests that the disagreement effect was signed for childless couples —that is, it did depend on whether the female or the male partner intended to have a child. We used information criteria (Bayesian Information Criteria, BIC, and Akaike Information Criteria, AIC) to compare the fit of all four models. Lower is the level of information criteria, better is the fitting of the model. Information criteria (AIC and BIC) advocate the best fitting for Model 3 which assumes a linear and signed effect of disagreement. [5] To sum up, we can argue that couple disagreement about having a first child has gender directional differences. At parity one or above the coefficients of the two signed disagreement variables – as well as the absolute disagreement variable – were not statistically different from the category 'agreement on not' (Table 4), which means that the likelihood of having a second or an additional child was strongly precluded if either the woman or the man vetoed this decision. The hypothesis of equality between the signed disagreement categories has to be rejected although with a weak evidence (i.e., at 10% level; p-value of the Wald-test is .0901; bottom of Table 4). Information criteria (AIC and BIC) advocate the best fitting for Model 3 which assumes a linear and signed effect of disagreement. To sum up, we can argue that couple disagreement about having an additional child has strong inhibiting effect on childbearing and potentially gender directional differences.

Positioning of disagreement. To evaluate whether disagreement was shifted more toward agreement on having a child than toward agreement on not having a child (i.e., positioning of disagreement), we compared the fit of a model having a linear specification of both partners' fertility intentions in which disagreement had a score midway between agreement on yes and agreement on not with the fit of a

[5] If we restrict the comparison to Model 1 and Model 2. The empirical evidence of the best fitting model would be contradictory. BIC is in favour of an absolute disagreement (although with just one point of difference) while AIC is in favour of a signed disagreement (4 points of difference). This contradiction is overcome looking at the models which assume a linear specification of disagreement. Here information criteria clearly tell us that signed disagreement (Model 3, Table 3) has to be preferred to absolute disagreement (Model 4, Table 3).

model in which a categorical variable (N-1 dummies) reflected the possible combinations of partners' short-term childbearing intentions. The linear variable denoting "partners' combined birth intentions" took the value 0 for 'agreement on not', 1 for disagreement 'man intends, woman does not', 2 for disagreement 'woman intends, man does not', and 3 for 'agreement on yes' (Model 3). Alternatively, it ranged from 0 to 3, being the disagreeing couples pooled in one single group (Model 4). We could find some empirical evidence for a linearity effect of partners' combined short-term birth intentions on a 4-level scale (AIC and BIC reached the minimum level for Model 3 in which birth intentions were coded as a numerical variable on 4 levels). This evidence suggest that disagreement is located in a hypothetical mid-point between agree on yes and agree on not with disagreement cases in which she only intends being closer to yes than to no and disagreement in which he only intends being closer to not than to yes. This does not prevent us to argue that disagreement has an inhibiting effect on childbirth (The hypothesis of equality of agreement on yes and disagreement has to be rejected at parity zero as well as at higher parities; bottom of Table 3 and Table 4); and that this effect is stronger at higher parities than at the start of childbearing career (none of the disagreement variables is statistically different from agreement on not in the models run on couples who have already children).

Gendering of disagreement. The analysis conducted so far revealed that disagreement effects are signed and that the woman's voice tends to prevail in case of disagreement. In the next step, we check whether reproductive decision-making is influenced by gender equality in the intra-household distribution of bargaining power (bargaining power effect). To this end, we compared models with and without the interaction terms between the 'partners' birth intentions' and 'inequality between partners in household income contribution'. We expected to find that a woman's predominance in reproductive decision-making could be reinforced if she had stronger bargaining power than the man or, alternatively, reduced if she had weaker bargaining power. Our results (regression results available upon request) show that the woman's influence in childbearing decision-making was not based on bargaining power. Being in a couple with a female breadwinner (e.g., woman who contributes at least 60% to the household income[6]) increased the chance of having a first child but there was not a significant interaction effect of 'female breadwinner' and 'only woman but not the man intends a child'. Consequently, we did not retain such an interaction term in the final models of Table 3 and we conclude that woman's predominance in reproductive decision-making does not depend on her stronger bargaining power within the couple. [7] Interestingly, looking at the marginal probabilities of having a first child among disagreeing couples in the models including the interaction effect 'intentions*female breadwinner', we observe a higher chance to get a child for couples in which the woman is breadwinner but this is irrespective of the type of disagreement (whether the female or the male partner only intended a child)

[6] It is worth to be noted that 72% of female breadwinner couples in our sample are couples in which both partners are employed.

[7] This result did not change when we tested an interaction term between birth intentions and partners' combined educational levels.

(Figure 3). Due to the small sample size, we performed the same analysis pooling together all couples and controlling for the parity status and found that the models with the interaction terms were not statistically better fitting than the models with only the main effects. This result should be considered with some caution because of the limited number of couples at parity one or above who agreed on having an additional child and had a female partner who was breadwinner. On the other hand, if the man had stronger power (male breadwinner model), he did not have a bigger influence on the decision to have a child. To sum up, we can argue that the resolution of partners' disagreement in reproductive decision-making is gendered, being women more influential than men, but not correlated to partner's bargaining power within the couple.

Table 3. Propensity of having a first child. Odds ratio. Parity 0. Couple level HILDA data

	Model (1)	Model (2)	Model (3)	Model (4)
VARIABLES				
Partners' birth intentions (Ref. Agreement on not)				
Disagreement: M yes, W not	1.549			
	(0.492)			
Disagreement: W yes, M not	3.551***			
	(1.070)			
Agreement on yes	10.55***	10.46***		
	(2.402)	(2.376)		
Absolute disagreement		2.420***		
		(0.611)		
Numeric variable on 4 levels			2.247***	
			(0.169)	
Numeric variable on 3 levels				3.350***
				(0.381)
SOCIO-DEMOGRAPHIC VARIABLES				
Female breadwinner (Ref. Woman <60% HH)				
Woman contributes at least 60%	2.230***	2.202***	2.257***	2.228***
	(0.561)	(0.551)	(0.567)	(0.557)
Marital status (Ref. In a de facto relationship)				
Married	2.277***	2.281***	2.288***	2.288***
	(0.387)	(0.385)	(0.386)	(0.384)
Woman's age	0.941***	0.943***	0.941***	0.944***
	(0.0190)	(0.0189)	(0.0188)	(0.0187)
Partners' age (Ref. same age)				
Male partner is younger	1.518	1.464	1.539	1.481
	(0.665)	(0.637)	(0.672)	(0.643)
Male partner older (> 3 years)	0.942	0.922	0.930	0.910
	(0.169)	(0.166)	(0.166)	(0.163)
Woman's educational level (Ref. compulsory)				
Certificate or Diploma	0.888	0.869	0.888	0.870
	(0.206)	(0.201)	(0.205)	(0.201)
Bachelor and above	1.248	1.208	1.257	1.217
	(0.328)	(0.314)	(0.329)	(0.315)
Partners' educational level (Ref. same level)				
Man more educated than woman	0.915	0.901	0.922	0.908
	(0.211)	(0.207)	(0.212)	(0.207)
Man less educated than woman	1.118	1.103	1.110	1.097

	(0.228)	(0.223)	(0.225)	(0.221)
Partners' employment status (Ref. both employed)				
Both not employed	0.935	0.969	0.924	0.962
	(0.473)	(0.488)	(0.481)	(0.495)
Only man employed	0.617	0.621	0.627	0.631
	(0.202)	(0.203)	(0.203)	(0.205)
Only woman employed	0.421*	0.421*	0.432*	0.430*
	(0.212)	(0.210)	(0.217)	(0.214)
Household income (HH) (log)	1.305	1.300	1.296	1.291
	(0.255)	(0.249)	(0.251)	(0.245)
Siblings (Ref. two or more)				
Both partners have no siblings	0.859	0.862	0.875	0.877
	(0.213)	(0.216)	(0.214)	(0.217)
At least one partner has 1 sibling	0.752	0.751	0.755	0.753
	(0.136)	(0.135)	(0.135)	(0.134)
Health (Ref. good health)				
One partner fair or poor health	0.723	0.718	0.711	0.708
	(0.176)	(0.173)	(0.171)	(0.169)
Year of interview (Ref. Year 2005)				
Year 2008	0.859	0.860	0.877	0.877
	(0.160)	(0.159)	(0.164)	(0.163)
Year 2011	0.662**	0.660**	0.675*	0.672**
	(0.134)	(0.134)	(0.137)	(0.136)
State of residence (Ref. New South Waves)				
Victoria	1.073	1.067	1.067	1.061
	(0.229)	(0.227)	(0.226)	(0.224)
Queensland	1.804**	1.835***	1.787**	1.817**
	(0.424)	(0.430)	(0.419)	(0.425)
South Australia	0.936	0.979	0.933	0.977
	(0.289)	(0.300)	(0.288)	(0.299)
Western Australia	2.048**	2.105**	2.009**	2.065**
	(0.642)	(0.650)	(0.627)	(0.635)
Tasmania	0.668	0.690	0.660	0.686
	(0.302)	(0.325)	(0.293)	(0.317)
Nothern Territory	1.147	1.333	1.087	1.265
	(0.650)	(0.789)	(0.600)	(0.722)
Australian Capital Territory	1.206	1.218	1.198	1.210
	(0.579)	(0.588)	(0.575)	(0.583)
Constant	0.00810**	0.00874**	0.00775**	0.00838**
	(0.0173)	(0.0183)	(0.0164)	(0.0174)
Observations	984	984	984	984
Number of couples	754	754	754	754
Pseudo R2	**0.203**	0.199	0.201	0.197
BIC	1286	1285	**1275**	1280
AIC	1144	1148	**1143**	1148
Wald test on equality of coefficients				
a) H0:	0.0187			
b) w intends = m intends				
c) H0:Abs.dis. = Agree Yes		0.000		

*** p<0.01, ** p<0.05, * p<0.1. Clustered standard errors in parentheses

a) The null hypothesis on the equality of the two 'disagreement variables' has to be rejected; hence, couple disagreement has a signed different effect on childbirth.

b) The null hypothesis on the equality of the 'disagreement' variable and the variable 'agreement on yes' has to be rejected; hence, couple disagreement has a detrimental effect on childbirth.

Table 4. Propensity of having an additional child. Odds ratio. Parity 1+. Couple level HILDA data

VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)
Partners' birth intentions (Ref. Agreement on not)				
Disagreement: M intends, W does not	0.497			
	(0.313)			
Disagreement: W intends, M does not	1.521			
	(0.843)			
Agreement on yes	2.295**	2.302**		
	(0.874)	(0.873)		
Absolute disagreement		0.936		
		(0.453)		
Numeric variable on 4 levels			1.482***	
			(0.173)	
Numeric variable on 3 levels				1.723***
				(0.298)
SOCIO-DEMOGRAPHIC VARIABLES				
Female breadwinner (Ref. Woman <60% HH)				
Woman contributes at least 60% of HH	0.772	0.785	0.828	0.828
	(0.294)	(0.296)	(0.314)	(0.313)
Satisfaction of gender division of child care tasks				
Male partner satisfied	0.783	0.775	0.775	0.773
	(0.312)	(0.308)	(0.308)	(0.306)
Female partner satisfied	1.587*	1.587*	1.565*	1.569*
	(0.418)	(0.418)	(0.415)	(0.416)
Parity (Ref. 1 child)				
2 children	0.397***	0.396***	0.393***	0.391***
	(0.0948)	(0.0949)	(0.0935)	(0.0930)
3+ children	0.533*	0.524*	0.510**	0.505**
	(0.184)	(0.179)	(0.174)	(0.171)
Marital status (Ref. In a de facto relationship)				
Married	2.651***	2.580***	2.564***	2.540***
	(0.693)	(0.681)	(0.664)	(0.660)
Woman's age	0.858***	0.859***	0.857***	0.858***
	(0.0209)	(0.0207)	(0.0207)	(0.0207)
Partners' combined age (Ref. Same age)				
Male partner is younger	0.765	0.818	0.789	0.809
	(0.501)	(0.542)	(0.522)	(0.535)
Male partner older (more than 3 years)	0.627**	0.644*	0.645*	0.648*
	(0.146)	(0.148)	(0.148)	(0.149)
Woman's educational level (Ref. Compulsory)				
Certificate or Diploma	1.202	1.202	1.168	1.174
	(0.391)	(0.392)	(0.379)	(0.381)
Bachelor and above	1.335	1.292	1.299	1.291
	(0.506)	(0.490)	(0.492)	(0.489)
Partners' combined educational level (Ref. Same level)				
Man more educated than woman	0.957	0.925	0.949	0.937
	(0.287)	(0.278)	(0.284)	(0.280)
Man less educated than woman	0.744	0.730	0.726	0.720
	(0.212)	(0.207)	(0.206)	(0.204)
Partners' combined employment status (Ref. Both employed)				
Both partners not employed	0.634	0.650	0.647	0.648
	(0.301)	(0.311)	(0.309)	(0.311)

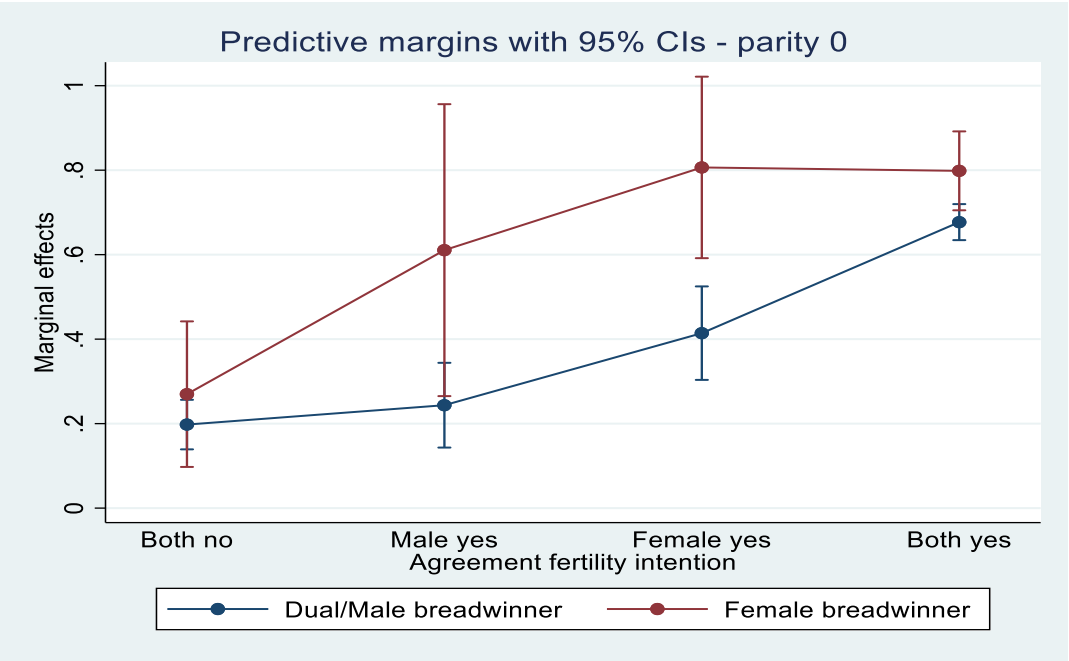
Only man employed	1.040	1.051	1.047	1.051
	(0.243)	(0.245)	(0.245)	(0.245)
Only woman employed	3.162	3.299	3.082	3.153
	(2.732)	(2.888)	(2.655)	(2.723)
Household Income (HH) (log)	1.239	1.236	1.243	1.240
	(0.270)	(0.254)	(0.262)	(0.256)
Siblings (Ref. Two or more)				
Both partners have no siblings	1.088	1.054	1.058	1.051
	(0.481)	(0.465)	(0.475)	(0.473)
At least one partner has 1 sibling	1.090	1.088	1.071	1.069
	(0.265)	(0.264)	(0.261)	(0.260)
Health (Ref. Good health)				
One partner fair or poor health	1.272	1.312	1.282	1.296
	(0.430)	(0.449)	(0.440)	(0.446)
Year of interview (Ref. Year 2005)				
Year 2008	0.865	0.879	0.896	0.901
	(0.215)	(0.220)	(0.223)	(0.225)
Year 2011	0.932	0.953	0.988	0.995
	(0.262)	(0.265)	(0.278)	(0.279)
State of residence (Ref. New South Waves)				
Victoria	1.006	1.018	1.031	1.039
	(0.304)	(0.305)	(0.309)	(0.310)
Queensland	1.244	1.226	1.281	1.275
	(0.371)	(0.365)	(0.378)	(0.376)
South Australia	0.860	0.865	0.889	0.886
	(0.402)	(0.407)	(0.406)	(0.405)
Western Australia	1.328	1.321	1.391	1.390
	(0.496)	(0.495)	(0.521)	(0.522)
Tasmania	1.279	1.109	1.147	1.075
	(0.663)	(0.607)	(0.613)	(0.591)
Northern Territory	3.077	3.493*	3.159	3.319*
	(2.236)	(2.382)	(2.249)	(2.323)
Australian Capital Territory	0.298*	0.312*	0.317*	0.322*
	(0.188)	(0.195)	(0.209)	(0.209)
Constant	0.118	0.123	0.0802	0.0896
	(0.288)	(0.284)	(0.187)	(0.205)
Observations	614	614	614	614
Number of couples	520	520	520	520
Pseudo R2	**0.166**	0.162	0.162	0.159
BIC	828.1	825.2	**818.8**	820.7
AIC	682.2	683.8	**681.8**	683.6
Wald test on equality of coefficients				
a) H0: Women Intend = Men Intend	0.0901			
b) H0: Absolute disagreement = Agreement on Yes		0.00826		

*** p<0.01, ** p<0.05, * p<0.1. Clustered standard errors in parentheses.

a) The null hypothesis on the equality of the two 'disagreement variables' has to be rejected; hence, couple disagreement has a signed different effect on childbirth.

b) The null hypothesis on the equality of the 'disagreement' variable and the variable 'agreement on yes' has to be rejected; hence, couple disagreement has a detrimental effect on childbirth.

Figure 3 Predicted marginal probabilities of having a first child. Model including the interaction effect "partners' combined birth intentions" and "female breadwinner"



Note.

The model controls for all variables of Model 1 (Table 3).
Estimates of the models not reported in the paper but available upon request.

Effect of background variables on having a child. We briefly comment on the effects of other socio-demographic predictors of fertility. At parity zero, results show a negative and statistically significant effect of woman's age, all other things being equal, which can be attributable to women's biological limits of reproduction. Married couples have higher chance to have a first child. Couples in which only woman is employed show a lower likelihood of having a first child than couples in which both partners are employed, all other things being equal. By contrast, couples in which the woman contributes to at least 60% of the household income are more likely to have a child. This finding reveals that woman's better access to economic resources lowers the chance of a childbirth only if combined with a weak economic situation of the man (i.e., the male partner is unemployed). By contrast, couples have higher chances to get a child if the woman is breadwinner and both partners are employed. Both period and spatial effects are detected in the propensity to have a first child. The year of the interview and the state or residence have both statistical significant effects on the likelihood to have a child. Couples interviewed in 2011 have lower chance to get a child than those interviewed in 2005 or 2008, which could be linked to the introduction of the baby bonus in 2004 whose effects on fertility were shown to be on decrease over time (Keygan 2017). At parity one or above, the likelihood of having an additional child is inversely correlated to woman's age and with the number of children already born (Table 4), all other things being equal. Married women are more likely to progress towards higher parities. We observed a positive effect of woman's satisfaction in the gender distribution of childcare tasks within

the couple. Finally, according to the State of residence we find higher chances of having an additional child among couples living in the Northern Territory and lower chances among those living in Australian Capital Territory. This reflects nicely the territorial differences in the total fertility rate in Australia.

Concluding remarks

We compared prospective short-term birth intentions with subsequent births. We usied couple-level longitudinal data from Australia spanning over a 6-year period (2005-2011). The main aim was to determine whether one of the partners has more decision-making power than the other if a conflict raises about having a(nother) child and the criteria according to which the conflict is solved. Thanks to high-quality data on both partners, our study could be developed in a prospective longitudinal dimension and reflects a genuine couple approach.

Our research contributed to the literature in a number of ways. First, we found that in the Australian context of widespread fertility control characterized by large use of modern contraception, one partner's intention not to have a child is not always sufficient to prevent a birth of child. The effect of disagreement lies between that of agreement on having a child and that of agreement on not having a child and it is shifted more toward agreement on not at parity one or above. Second, we found that the veto mechanism adopted in the resolution of disagreement is gendered. If a conflict raises, the man is not able to counterbalance with his veto the intention of the woman to have a first child. This result is in line with research suggesting that women are more influential in fertility decision-making (Townes et al. 1980; Fried et al 1980; Beckman 1984; Rindfuss et al 1988; Testa et al 2011). After the transition to a first child, a double veto-power model prevails insofar none of the partners is able to drive the final couple decision towards his/her own intentions, which is the intention to have an additional child. This result is in line with findings pertaining to other countries, like Italy (Testa et al 2014), Germany (Bauer and Kneip 2013), the Netherlands (Jansen and Liefbroer 2006), Sweden (Thomson and Hoem 1998), and the US (Thomson et al 1990; Thomson 1997). The difference in respect to these previous literature is that the double veto model is not symmetrical in Australia because women tend to be more influential than men also at higher parities. Finally, women's prevalent weight on couple reproductive decision-making is not driven by their greater bargaining power within the couple, nor by their better satisfaction with gender division of childcare task within the couple, rather by their traditional role as primary responsible of childcare. This result would support the sphere of interest rule as heuristic adopted to solve partners' conflict. However, we cannot rule out that more refined measures of bargaining power and gender equality would produce different results. Women's bargaining power depends on a number of variables at a time (especially age, education, employment, income), rather than on just one (Bertocchi et al 2012). Furthermore, we cannot exclude that a larger sample size would lead us to different conclusions about the predominant heuristic. The disagreement effect is based on a small group of conflicting couples in our study and when it is interacted with another variable (female

breadwinner, or satisfaction with gender division of childcare tasks) the issue of small size becomes even more serious.

Despite its contribution, our research could be improved in a number of ways. First, reported child-timing intentions might reflect the resolution of a negotiation process between partners, as recognized in previous studies (Ajzen 1991; Miller 1994, 2011). The tiny proportion of disagreeing couples in our target sample would support this interpretation. This issue – which should be taken into account while reading the results – concerns all analyses based on couple level data (Becker 1996). Ideally, for a better understanding of partners' negotiation process, information on contraceptive behavior should complement the data on partners' fertility motivations, desires, and intentions. Similarly, information partners' interaction and each partner perception of the other's view should complement the data on the partner's own fertility intentions. Such data would allow us to discern whether each of the partners is incorporating the partner context into his/her own intentions, and if so, the extent to which he or she does so (Testa 2012; Morgan 1985). The low level of disagreement in our data signals that the reported partners' birth intentions may already be the result either of spousal bargaining or of assortative mating in which individuals tend to choose partners who have similar fertility preferences. Indeed, the correlation between partners' reports is quite high in our study: 48% at parity zero and 63% among couples at higher parities. The extent to which spousal bargaining and assortative mating may influence couple fertility decision-making represents a fruitful area for future research.

Studying childbearing in a dyadic perspective involves high data requirements which cannot be fully met by the available HILDA dataset. First, the limited length of observation period does not allows us the ultimate outcome of partners' interaction process, whether for example the lack of a childbirth reflects a temporary postponement of childbearing or a definitive abandonment of childbearing career. Second, the small sizes of couples' sub-samples limits any in-depth analysis of couple decision-making at parities above one. Particularly, we are not able to treat separately the intention to have a second child and that of having a third or higher birth order child which might be triggered by different decision-making contexts, a normative one the former and a discretionary one the latter (Testa et al 2014). We recognize this as a strong limitation of the analysis, but we also acknowledge that the most relevant contrast, which reflects the most significant change in the couples' life course, is between the decision to become a parent and the decision to have a second or a higher birth order child (Philipov et al 2006; Philipov et al 2015). Third, the limited information on couples' birth desires and contraceptive behaviour prevent us to disentangle the specific stage in which the disagreeing partners actually are in the interaction process, for example, whether they have adopted already a behaviour aimed at achieving pregnancy (i.e., proceptive behaviour, see Miller 1986) or they are just at the stage of intending to do so. It is to be hoped that future data collection deserves more attention to issues of couple proceptive and contracceptive behaviour. Last but not least, measuring birth intentions on a binary scale prevents us to grasp the uncertainty linked to them which is a relevant component of the decision-making (Bernardi et al 2015; Nı´ Bhrolcháin and Beaujouan 2011; Rackin and Bachrach 2016) and inhibits the

possibility to measure higher – and intermediate – shares of couple disagreement. We are aware that this is a strong caveat of our investigation which makes birth intentions a fuzzy measure; on the other hand, the specification of birth-order, partner context and temporal frame (i.e., the target, the context and the time) reassures us that we are dealing with a realistic measure of behavioural intentions (Ajzen and Fishbein 1977).

We believe that our analysis of birth intentions and subsequent outcomes in a dyadic context has contributed to the understanding of the reasons why birth intentions do not always match the subsequent outcomes in Australia. We hope that future data collection will deserve more and more attention to the different dimensions of partners' negotiation process so that fertility choices could be contextualized in a genuine dyadic manner as reflection of a couple decision-making.

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