CHILD-NUMBER DESIRES AND THEIR CHANGES AFTER THE BIRTH OF A CHILD

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Abstract

The paper aims to investigate temporal changes of child-number desires by using a French longitudinal study carried out in the period 1998-2003. Repeated measures on the number of children individuals want to have are available for a followed sample of respondents aged 15 to 45. Results show that child-number desires change quite often even in a relatively short time framework of five years. Revisions downwards are more likely than revision upwards, and they help to explain the negative gap frequently observed between actual and intended fertility. Changing intentions are strongly influenced by the occurrence of other life course changes, like the birth of a child and the entry in a partnership, that induce people to enlarge their initially stated desired family size. Revisions downwards are more likely for respondents who declared a large family size at the initial wave and for childless respondents, especially those who did not manage to become a parent in the inter-survey period, or simply postpone the time of the start of childbearing. The instability of child-number desires weaken their predictive power and suggests that studies aimed at investigating subsequent actual reproductive behaviour should be focused on measures of child-timing desires.

Keywords: Changing intentions, child-number desires, childbearing.

1. Introduction

Revisions of childbearing intentions through time are a relevant factor justifying the inconsistency observed between intended and subsequent actual reproductive behaviuor. Changes of individuals' priorities is mentioned among one of the most important reasons for not having had all the children desired at the beginning of the reproductive career by European respondents (EU-25) of childbearing age (Testa, 2006, 2007). However, only a few studies have examined the predictors of such changes (Heaton et al. 1999), and only a few in a longitudinal perspective because the longitudinal data required to track these changes are rare.

In the current paper I analyze child-number desires and their temporal changes by using a dynamic approach which is allowed by the French longitudinal data, the "Permanent survey on the life condition of households."

First, I examine the determinants of child-number and child-timing desires, second, I compare their predictive power on subsequent reproductive behaviour by running separated models on childless respondents and respondents with children. Third, I investigate the determinants of changing child-number desires in the individual's life course.

In the theories of fertility decision making there are two main views on the way people decide how many children they will have. Micro-economists (Becker, 1960) assume a one-stage process in which couples decide before the initiation of childbearing how many children to have and they (try to) stay with the frame of that decision. By contrast, other theorists assume that people decide about each child at a time in a sequential and successive decision making process (Namboodiri, 1983). In between these two broad approaches there are those who have argued the existence of a two-stage process, where the normative context would determine the minimum number of children people have, and the individual factors (psychological, economic, ideational etc.) would determine the upper bounds of family size (Fawcett et al. 1972).

A longitudinal study on child-number desires and their revisions over time aims to shed light on the mechanisms behind the childbearing decision-making process.

The variable child-number desires is preferred to the child-timing desires in the analysis of changing intentions because modifications in the desired number of children are more clearly, while any shift of the timing of a planned birth may be more difficult to be captured. This is particularly true when respondents are asked to indicate an interval for the child timing rather than a precise year, as in the French survey. Moreover, child-timing intentions are asked only with reference to the next child and therefore they are not very useful in a study where the main emphasis is on the stability, or change, of total intended family size.
The paper is organized as follows: a review of the literature on child-number desires and the determinants of their temporal changes is given in section 2. In section 3, I describe the dataset and the methodology used, and in section 4 I present the main results coming from the descriptive and the multivariate analysis. Finally, in section 5, I draw some concluding remarks and I discuss the implications stemming from my analysis.

2. Theoretical background

Child-number and child-timing, i.e. the desires for a given number of children and the desires to have a child at a certain time, are two different dimensions of the childbearing process. They are both clearly defined and conceptualized by Miller and Pasta who have also proved the reliability and the construct validity of both measures in several articles (Miller 1994; Miller and Pasta 1993, 1994, 1995). The authors also distinguish between desires and intentions: the former is defined as a feeling about possible goals, the latter is considered as a personal commitment to action. I do make reference in the current paper to both indicators child-timing and child-number, but I do not make any distinction between intentions and desires, which are used interchangeably in the rest of the paper. I mainly focus on child-number desires, while child-timing is functional to the examination of the child-number indicator and prevalently used in a comparative way.

Child timing and child-number desires are both important in predicting proceptive behaviour, which is aimed at achieving a conception (Miller and Past, 1995a). However, among people at parity 0 the most important one has proved to be child-timing intentions, while among people at parity 1 or higher parities child-number desires have been resulted as much predictive as child-timing desires and even more. The evidence suggested that timing looses some of its importance once a first child is born and that the strength of intention to have another child becomes relatively more important in this phase (Miller and Pasta, 1995a).

One of the few studies related to the changes of fertility intentions is the one carried out by Heaton et al. (1999) that focuses on revisions of childless intentions over time and come up to the conclusion that changes in the marital status, and more specifically entering a marriage relationship, is among the most relevant determinant of changing negative fertility intentions in positive ones. Moreover, the authors found out a quite high instability of childbearing plans especially early childbearing plans.

In their study of fertility motivations and desires Miller and Pasta (1994) evidenced that the birth of a first child causes an increase in positive motivations for childbearing. The arrival of a baby would stimulate a biological mechanism that enhances positive responsiveness to the baby and strengthen motivation for another baby. According to the authors, there are two additional factors behind the increase in child-number desires after the birth of a child: the unplanned births that lead to an upwards adjustments in the child-number indicator, and the gender preferences, if the child born does not meet the gender desires of the parents, the parents may increase the number of children desired. This positive effect would not end up in a positive feedback loop because counterbalanced by three different mechanisms that include a negative motivation, a satiation, and a delay mechanism.

3. Data and methods

Child-timing desires are measured by asking respondents to indicate how soon they intend to have their next child, while child-number desires reflect the total number of children people want to have in their life. The child-timing is captured in the questionnaire through the questions: 1) *Do you want to have any (more) children, now*

or later, maybe also an adopted child? 2) *When do you wish to have your next child?* The child-number desires is captured by the question: *How many children do you want to have in total, included those that you have already had and, perhaps, those that you are expecting?* In the rest of the paper the terms 'intentions' and 'desires' are used in an interchangeable way, as they were synonymous. I consider four response categories for the child-number desire, i.e., 0, 1, 2, and 3 or more children, because only very few people reported an intention to build a family with 4 or more children. Since the question on child-number desires has been repeated also in the wave conducted in 2003,[1] I am able to monitor changes in the variable that may have occurred in the inter-survey period.

The French longitudinal sample includes males and females aged 20-45, whose fertility intentions are reported in 1998 and 2003. More detailed information on the survey, the quality of the data and the sample attrition may be found in the paper written by Testa and Toulemon (2006).

In a first stage of the analysis, I examine both the child-number and the child-timing desires and I look for similarities in the determinants of the two fertility preferences variables.
I run three distinct models. First, a logistic regression model for the absence of children desires, where the response is a dichotomous variable equal to 1 if there is no-child desire and 0 otherwise. This model is run on the whole sample of respondents in the ages 20 to 45. Second, a logistic model for the child-number desires, with a dependent variable equal to 1 if respondents want to have more than one child, and 0 if they prefer only one child. Third, a logistic model for the child-timing desires, where the outcome variable is coded 1 if respondents want to have a child within the next five years and 0 if they want it later.[2] In the second and the third model only the sub-sample of people expressing a desire for children is selected.
I examine in a separate set of models (the first one describe above) the negative fertility desires, because whenever there is no wish for children, child-timing and child-number coincide. While the comparison between the determinants of child-timing and child-number desires is referred only to respondents who want to have children who entered the second and the third set of models. When interpreting the results from these models, it should be considered that the significant factors do discriminate only people with strong and weak fertility intentions, since the models are conditioned, by construction, to the presence of positive fertility desires.
All the three models are stratified by parity, i.e., they are run on childless respondents and respondents with children separately.

In a second stage of the analysis, I compare the predictive power of child-timing and child-number desires in terms of subsequent reproductive behaviour. To this aim I

[1] The wording of the question is exactly the same in the two rounds of the survey.
[2] The second and the third logistic models can be also replaced by an ordered logistic model where the dependent variable is specified as follows: child-number desires as '1', '2', and '3+'; and child-timing desires as: 'as soon as possible', 'within five years', 'later than in five years'. I run such alternative models, but I found out that they do not respect the parallel regression hypothesis and I decided, given also the limited sample sizes, to show the estimates from the simple logistic models. However, the results in terms of sign and significance of coefficient do not vary between the two different model specifications.

implement logistic regression models with a response variable equal to 1 if individuals get a child in the inter-survey period and 0 otherwise.

Each of these distinct models is run separately on childless respondents and respondents with children, since those who have started their reproductive career cannot be treated jointly with those who can hardly imagine what the experience of being a parent means.

The third part of the analysis is reserved to the examination of changing child-number desires over time and is mainly focused on the reasons behind such changes. The multivariate analysis is preceded by a broad description of the trend in the mean intended family size over the quinquennial period 1998-2003.

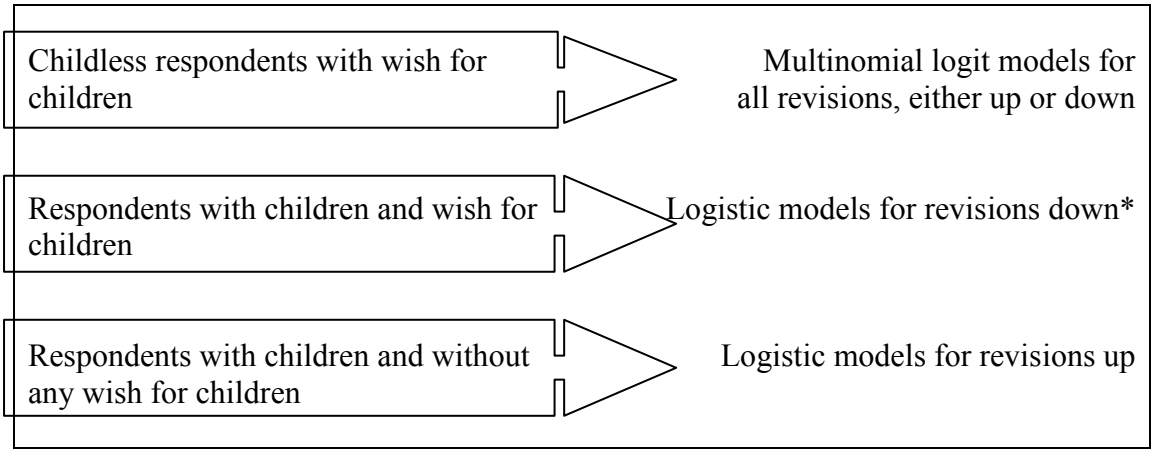
In a first step, I implement multinomial logistic regression models on the sub-sample of childless respondents. In these models the response variable takes three main categories: 'stable child-number intentions', 'changing child-number intentions up', and 'changing child-number intentions down'. Stability, or changes are referred to the follow up period, which spans 5 years from 1998 to 2003. Since revisions downwards are not possible (by definition) among individuals without any desire for children at the initial wave, I took out from the sample those childless individuals who reported that they did not want to have any child in 1998. Although in principle this may be source of some biases, there were only a minor percentage of people who did not want to have any child in the sub-sample of childless people (2%), so that we can reasonably assume that the bias, if any, is not so relevant for our results.

In a second step, I separate parents into two distinct groups: those who did want to have additional children in 1998, and those who did not express any child desire in 1998 and I apply logistic regression models to each of these two sub-samples. The response variable is a dummy equal to 1 if there is a change down for those people who declare a child-number desire in 1998, and a dummy equal to 1 if there is a change up for those individuals who did not express any child desire in 1998.

All models used in the multivariate analysis are stratified by parity, which means that they are run separately on people with and without children.

This methodological approach _depicted in Figure 1_ gives a quite fragmented picture and uses low size sub-samples, but it also offers a detailed analysis of the reasons for changing fertility plans and, more specifically, it gives an articulated view of the effects of a birth of a child on the stability of fertility intentions. The experience of having a baby may differ a lot between people who get their first child and those who are having a higher birth-order child. Remarkable differences may be also observed, within the group of parents, between those who do not want to have any other child, that have presumably reached their desired family size, and those who still want to enlarge their family.

Figure 1 Schematic representation of the logistic regression models for changing intentions:



Note.
* In principle, revisions may happen in both directions, up and down, among those who wish to have children at the initial wave. However, only 3 out of all the respondents with children that want to have additional children in the first wave (1998) reported an increased number of desired children in 2003. Thus, I take out from this sub-sample the three cases and I considered in the logistic regression models only revisions downward.
** Logistic regression models for changing intentions up and down are complemented by the logistic regression model for constancy that is run on the whole sample of respondents with children and constancy is contrasted by a revision of any type, either up or down.
*** All the logistic regression models are run separately on childless respondents and respondents with children.

The explanatory variables included in the logistic regression models are: gender, age, parity, marital and de facto conjugal status, duration of partnership, enrolment in school, educational level, employment status, household income, religiousness, fecundity impairments. For the details in the constructions and code of these covariates you may see the paper written by Testa and Toulemon (2006). In the models on changing intentions I added a dichotomous variable equal to 1 if respondents get a child (at least one) in the inter-survey period, and 0 otherwise. Other dynamic explanatory variables are not included in the models due to the small sample sizes.[3] The only exception is the change from single to cohabiting or married status, for which I had enough cases to compute two separate covariates: 'single in the whole inter-survey period' and 'single only at the beginning of the longitudinal study'. The necessary assumption behind the use of this variable is that entering a cohabiting or a marriage relationship preceded the revision of intentions.

4. Results

4.1 Determinants of child-number desires

Among childless respondents, the absence of children desires is mostly linked to the age (Table 1): the older the people are, the more likely it is that they do not have any

[3] I try to estimate the effects of such variables, but since there were only few cases in the samples the relative coefficients, or alternatively their standard errors, tend to be extremely large. Such evidence suggested the opportunity to take them out from the statistical analysis, although they could be very relevant in the study of changing intentions.

wish for children.[4] Among individuals with children the current achieved parity is also relevant beyond age in determining negative fertility intentions. These people may not want to have additional children, simply because they have already reached their desired family size. Consistently, negative fertility intentions are more frequent among those who have larger families, 3+ children as compared to those who have smaller families, exactly 2 children (Table 1).

Age and parity are the most significant predictors of child-number desires (Table 2). In particular, age is more relevant among those who do not have yet a child and parity is more important among those who have already children. They are both inversely correlated to the number of children desired. The older the people are, the smaller is their desired family size. As time passes people become more conscious about their limited capability to achieve large family size. Similarly, the higher is the parity already reached, the smaller is the number of additional children desired. Interestingly, people who have already two children are the least likely to indicate a preference higher than two children. Evidently, a family with two children is the most satisfying option among French people in reproductive ages.

As for the child-number desires, age is the most significant predictive variable of child-timing desires (Table 2). It is inversely related to the desired time of the first child, while for higher birth-orders children it is positively associated with the time of a planned next birth. As people become older, they tend to plan their next child sooner and sooner because they know that reproduction is bounded within certain ages. In addition, and differently from the child-timing desires, partnership and income show up as significant predictive factors of child-timing desires. In particular, being single and having a high income are associated with a childbearing postponement. However, the level of income shows opposite effects in the sub-samples of childless respondents and respondents with children: it delays the time planned to get a first child, while it anticipates the time scheduled for the arrival of a higher birth-order child.
According to these findings I can assume that when people start to plan the timing of a birth, they come closer to reality and their economic conditions and partner situation become statistically significant in the models. Whereas, when they plan the final size of their family, a project that necessarily needs a longer period of time to be realized and is located in a more remote future, they tend to remain more vague. In this case only age and actual achieved parity are significant explanatory factors.

Table 1 Odds ratios for the absence of child desires by parity. All respondents

	Childless respondents	Respondents with children

[4] This result may have two different interpretations: either it is due the fact that the determinants for childlessness are missing in the model, or it is a sign of the prevalent disposition to accept childlessness ex-post, i.e., only when childbearing is no longer probable, hypothesis that would support the character mainly 'involuntary' of childlessness in France.

AGE		
(Age – 30)	5.9	***
$(Age – 30)^2$	2.3	*
PARITY (*Ref. One child*)		
Two children		
Three or more children		
MARITAL STATUS (*Ref. Married*)		
Single		
FECUNDITY IMPAIRMENTS	0.2	*
UNEMPLOYED	3.9	+
N. cases	363	

AGE		
(Age – 30)	6.2	***
$(Age – 30)^2$	0.7	+
PARITY (*Ref. One child*)		
Two children	4.0	***
Three or more children	6.0	***
MARITAL STATUS (*Ref. Married*)		
Single	0.5	*
FECUNDITY IMPAIRMENTS	0.6	*
UNEMPLOYED		
N. cases	402	

Note.
* p<0.05; ** p<0.01; *** p<0.001
Models selected with the stepwise procedure. A backward elimination procedure is used. The initial full models are controlled also for cohabiting, union duration, education enrolment, educational level, household income, and religiousness.

Table 2 Odds ratios for child-number and child-timing desires by parity. Only respondents who desire at least one child

	Childless respondents				Respondents with children			
	Child-number		Child-timing		Child-number		Child-timing	
AGE								
(Age – 30)	0.4	**	2.3	***			0.2	**
$(Age – 30)^2$	0.7		0.4	**			1.2	
PARITY (*Ref. One child*)								
Two children					0.3	*		
Three or more children								
EDUCATION (*Ref. Low-medium*)								
High educated					3.1	**		
MARITAL STATUS (*Ref. Married*)								
Single			0.1	***				
UNION DURATION (*Ref. < than 3 years*)								
3 or more years			0.2	**				
INCOME LEVEL			0.6	*			1.8	*
FECUNDITY IMPAIRMENTS	0.5	+	2.3	*				
RELIGIOUSNESS							2.2	+
N. cases	346				190			

Note.
* p<0.05; ** p<0.01; *** p<0.001
Models selected with the stepwise procedure. A backward elimination procedure is used. The initial full models are controlled also for cohabiting, education enrolment, and employment status.

4.2 Predictive power of child-number desires

The comparison of child-timing and child-number desires in terms of predictive power of subsequent childbearing reveals that child-number desires is a significant predictor of subsequent reproductive behavior only among respondents with children (Table 3). Whereas child-timing is a significant determinant of a subsequent childbirth also among childless people, although it takes stronger effects in the group of parents. The closer is the time planned to have a child, the more likely it is that respondents get a baby in the inter-survey period. The higher the number of wanted children, the higher the probability to get one in the inter-survey period. In particular, respondents

with a preference for two-children at the first wave are the most likely to give a birth in the subsequent 5 years (Table 3).
These results confirm earlier findings showed by Miller and Pasta (1995a) according to which the timing of a planned birth becomes less relevant as compared to the number of children desired, after the birth of a first child.

Table 3 Odds ratios for having a child in the 5-year survey 1998-2003.

Child desires variables	Childless respondents		Respondents with children	
CHILD-NUMBER DESIRES (Ref. *None or One child*)				
Two children	1.7		7.4	***
Three or more	1.6		2.8	
CHILD-TIMING DESIRES (Ref. *No child, or, if one, later than in 5 years*)				
Within the next 5 years	2.3	*	3.4	***
As soon as possible	4.1	*	7.0	**
Age 30	0.8		0.4	+
Age 30 squared	0.2	***	0.2	**
EDUCATION				
Medium level	0.6		1.1	
High level	0.5		2.1	+
MARITAL STATUS (Ref. Married)				
Cohabiting	3.3	*	0.8	
Single in the whole period	0.1	***	0.3	+
Single only in 1998	2.3		55.5	*
UNION DURATION (Ref. At maximum 6 years)				
7 or more years	0.3	+	0.7	
EMPLOYMENT STATUS (Ref. Employed)				
Unemployed	0.1	**	0.9	
Income mean	1.2		0.8	
Income mean squared	0.8		0.5	
RELIGIOUSNESS (Ref. No religious)	2.6	*	1.0	
FECUNDITY IMPAIRMENTS (Ref. None)	2.8	+	1.1	
N.cases	363	(47%)	402	(53%)

Note.
+ p<0.1 * p<0.05; ** p<0.01; *** p<0.001
Models controlled also for gender and education enrolment.

One important reason why child-number desires often fail to predict subsequent reproductive behaviour may be linked to the revisions over time of such desires, the size, the direction and the reasons of which I am going to analyze in the third part of the paper.

4.3 Temporal changes of child-number desires

At an aggregate level a slight decrease in the desired family size of respondents is registered in the inter-survey period 1998-2003. The mean total intended family size went down from 2.3 to 2.0 children in the 5-year period (Table 4). There are however considerable differences between those who had a child —whose fertility projects remained invariant— and those who did not have any child —whose desired family size decreased by 0.4 children—. The decrease is particular evident among childless individuals who did not become a parent in the inter-survey period for whom the mean desired family size went down from 2.2 to 1.6 children (-0.6 children). By contrast, among people with children who had an additional child in the follow up

period an increase in the total intended family size has been registered from 2.7 to 2.9 children. Consistently, revisions downwards are much more frequent among respondents who did not have a child as compared to those who did get a child in the former 5 years (Table 5).

Table 4 – Mean ultimately intended family size in 1998 and 2003 by parity

	1998	2003	Diff. 98-03
CHILDLESS RESPONDENTS			
Had a baby in 1998-2003	2.3	2.2	-0.1
Did not have a baby in 98-03	2.2	1.6	-0.6
All childless respondents	2.3	1.7	-0.6
RESPONDENTS WITH CHILDREN			
Had a baby in 1998-2003	2.7	2.9	+0.2
Did not have a baby in 98-03	2.4	2.2	-0.2
All respondents with children	2.5	2.4	-0.1
ALL RESPONDENTS			
Had a baby in 1998-2003	2.5	2.5	0.0
Did not have a baby in 98-03	2.3	1.9	-0.4
All respondents	2.3	2.0	-0.3

Table 5 – Consistency of child-number desires by actual childbirth in the last 5 years. Values in percent.

	Revisions down	Stability	Revisions up
Respondents without children	38	55	8
Respondents with children	21	57	20
All respondents	33	56	11

By looking at these figures, one may argue that not having a child may be a reason to revise downwards the initial intended number of children. Whether this is a consequence of a discouragement effect due to obstacles not easily to overcome I cannot say with the data at hand. But it seems that waiting for having children may bring people to a downward adjustment of their initially stated fertility preferences. Perhaps some of the respondents that are at extreme reproductive ages already in 1998 may feel that it is too late to have a child or an additional child five years later. This finding is also consistent with the lower stability of child-number desires among those who wanted to have a child in 1998 but did not manage to have one by 2003 (false positive cases) in respect to those who wanted and had a child (true positive). Indeed, only 42% of respondents in the former group express exactly the same desired number of children in the two waves of the survey, while the latter group shows a consistency level of 60% in the answers on child-number desires. Similar high consistency levels are also recorded among those expressing negative fertility intentions at the initial wave: 61% and 62% respectively among those who had one child or did not have any.

I found this preliminary result very intriguing and in the subsequent analysis I examined the role of a birth of a child in the process of changing intentions with a particular attention. A dummy variable indicating the birth of a child is added as a covariate into the models estimating changing fertility intentions. In this way I am able to see whether childbearing does have an effect on stability of child-number desires even after controlling for several other background factors. Before I show the

results of the regression models for changing intentions it is very instructive to look at two cross-tables (Tabb. 6 and 7) reporting the consistency levels of the responses in child-number desires between the 2 waves of the survey, 1998 and 2003.

Table 6 shows the consistency and discrepancy levels of child-number desires over time. The values along the main diagonal are the percentage of the respondents reporting consistent intentions in the two waves, overall they sum up to 56% of all respondents (Table 6). The highest consistency level, 26,8%, is recorded by those individuals indicating an ultimately intended family size of 2 children in both rounds, evidence, which supports the persistence of the two-child norm. The lowest level is registered among those indicating no child: only 1.4% of respondents reporting such an intention in 1998 did keep it till the wave 2003, evidence which supports the limited share of the persistent intended childlessness. The values above the diagonals show the proportions of revisions upwards, they sum up to 11% of all respondents. There are only a few cases of people changing upwards their initial intended family size whatever the initial intended parity is. Most of cases are those who indicate 2 children in 1998 and 3 in 2003 (5.6%) and those who report 1 child in 1998 but they switch to 2 children in 2003 (4%). The values under the main diagonal refer to people who revised their intentions downwards in the inter-survey period. These cases are more frequent than revisions upwards and sum up to 33% of the respondents (Table 6). Revisions from 2 or 3 children to a smaller number of children are more frequent than revisions from 1, 2 or 3 children to 0 child in 2003. Limitation in the positive number of children desired is more likely than a transition from positive to negative intentions, which indeed implies a more drastic change. Overall, the instability in child-number desires over the 5-year period is quite high (44%) and I try now to see which factors are associated with it.

Table 6 – Consistency level of child-number intentions in 1998 and in 2003. Values in percent

	FINAL INTENDED PARITY				
Year 1998	*Year 2003*				
	0	*1*	*2*	*3+*	*Total*
0	**1.4**	0.5	0.4	0.2	
1	1.5	**6.4**	4.0	0.7	11
2	3.5	11.5	**26.8**	5.6	
3+	0.5	6.5	9.6	**21.1**	
Total		33			**56**

Year 1998	*Year 2003*				
	0	*1*	*2*	*3+*	*Total*
0	**56,0**	20,0	16,0	8,0	100,0
1	11,9	**50,8**	31,7	5,6	100,0
2	7,4	24,3	**56,5**	11,8	100,0
3+	1,3	17,2	25,5	**56,0**	100,0
	6,9	24,9	40,7	27,5	100,0

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Year 1998	*Year 2003*				
	0	*1*	*2*	*3+*	*Total*
0	**0,3**	0,0	-0,1	-0,1	
1	0,1	**0,2**	-0,1	-0,2	
2	0,0	0,0	**0,3**	-0,3	
3+	-0,2	-0,1	-0,2	**0,5**	

One major factor is related with the actual and the intended parity. As shown in Table 7, instability of child-number desires is negatively associated with the actual parity of respondents and positively correlated with the intended final parity of individuals (see the column and the row marginal frequencies of Table 7). The percentages of people with consistent child-number desires in 1998 and 2003 are higher at higher actual parities (Table 7). The more children people have, the more they are experienced with childrearing, and the more accurately may be in making future fertility plans, which are consequently kept stable over time more often in comparison to projects made by people who just became new parents or who are still childless. By contrast, consistency is higher at lower intended family size (Table 7). Fertility projects become more uncertain if they concern more than one child because in this case they are also presumably spanned in a larger fraction of time. As in Table 7, the high stability in the intentions of people who do not plan to have any additional child, 85%, is attributable mainly to the group of those who have one, two, three children, or larger families (respectively 89% 88% and 86%), that is to people who may have already reached their desired family size. By contrast, only 57% of childless individuals maintain their intention not to have any child over the 5 years 1998-2003. On the other side, if one looks at the proportions of those reporting consistent intentions in 1998 and 2003 in the childless group, those expressing no children desires are the most numerous group.

Table 7 – Consistency levels in child-number desires stated in 1998 and in 2003, by actual and intended parity. Values in percent

Parity	INTENDED				
ACTUAL	*0*	*1*	*2*	*3+*	*TOTAL*
0	57	44	53	40	*47*
1	89	51	52	61	*61*
2	88	56	-	-	*75*
3+	86	44	-	-	*73*
TOTAL	*85*	*50*	*51*	*40*	

Evidently, these bivariate associations can be spurious since there could be other factors explaining the temporal changes in the child-number desires that may interact or not with actual and intended parity. In order to look at each of these factors, net of the others, I do a logistic regression analysis.

Multivariate analysis

The findings from the multivariate analysis confirm those suggested by the descriptive analysis.

As the desired family size increases, child-number desires become more and more unstable. In the multinomial models, childless respondents with a desire for a 2-child family are more likely to declare 5 years later a smaller preferred family size as compared to those who just plan to have one child. The transition from positive to negative fertility plans is less likely than the limitation of positive fertility plans from 2 children to 1 child. Conversely, those respondents who planned at least a 2-child family are less likely to revise upwards their intended child-number (Table 8).

Having a child in the inter-survey period boost additional intended childbearing, independently on whether the birth was planned or miss-timed. This effect is common to all respondents, whether childless or with children.[5] However, in the first group it emerges as a push towards upwards revisions of intentions (as it may be seen from the positive and significant coefficients in Table 8), while in the latter group it appears as a restraint from any change, but particularly from a downwards adjustment of child-number desires (Table 9).
Since the dates of the of a birth of a child are also registered in the surveys, I could also check whether this positive relationship between actual childbearing and future intended fertility is temporal dependent, i.e., the closer is the birth, the higher is the positive effect on additional intended number of children. Although the revisions upwards were more frequent among those who had a child in the last year, I have found no significant association the time of the birth and the changes in intentions, either in the bivariate or in the multivariate analysis.
Rigorously, I cannot be sure about the causal nature of the relationship between having had a birth and the increase in the child-number desires, because the change in the intentions may well have happened before the childbirth. However, it seems reasonable to assume that the revision of the intention was preceded and not succeeded by the childbearing experience.

Marital and employment status are the most influential background factors for changing intentions. They are statistically significant in both sub-samples of childless and parent respondents. Being single in the whole follow-up period and unemployed at the time of the initial wave (1998) increases the chance to revise down the child-number desires among childless people. By contrast, it decreases the likelihood to change downwards child-number desires among respondents with children. The latter result may appear contradictory, but I should remind that the single people who have already children are mainly separated, divorced, or widowed, and therefore, different from single childless individuals who have never cohabited with a partner.

Table 8 Multinomial logit models for changing intentions. Childless respondents with desire for children in 1998. Reference category "no change in child-number desires" in the quinquennium 1998-2003.

	Multinomial model for changing intentions	
	Change downwards vs. no change	Change upwards vs. no change
HAD A CHILD (Ref. *No child*)	-0.6	1.5 **
HAD A PLANNED CHILD	-0.8	1.5 *
HAD A MISS-TIMED CHILD	0.1	1.5 *

[5] In the models for respondents with children I do not show the estimates for having a child separately for planned and miss-timed births, but the results are similar to those evidenced for childless respondents: no significant differences are observed in the effects exerted by the two variables. The main conclusion is that having a miss-timed child does not affect the instability or the constancy of the previously stated fertility intentions differently from a planned child.

WANT A FAMILY WITH 2 OR MORE CHILDREN (Ref. Want a family with only one child)	1.5	**	1.5	**	-3.8	***	-4.0	***
MARITAL STATUS (Ref. Married)								
Single in the whole period	1.1	*	0.6		-1.3		-1.1	
Single only in 1998	0.5		-0.1		-0.2		0.1	
EMPLOYMENT STATUS (Ref. Employed)								
Unemployed	1.5	*	1.4	*	0.7		0.7	
N. CASES	143 (41%)				39 (11%)			

Note.
* p<0.05; ** p<0.01; *** p<0.001
There are 164 respondents who did not change their opinion, 48% of the childless sub-sample.

Table 9 Logistic regression models for stable and changing intentions. Change down only for those with child desires in 1998 and changes up only for those without any child desires in 1998. Respondents with children. *(a)*

	Model I for constancy		Model II for changes downwards		Model III for changes upwards	
HAD A CHILD IN THE INTER-SURVEY PERIOD (Ref. *No child*)	0.8	**	-3.8	***	*(b)*	
WANT A FAMILY WITH 2 OR MORE CHILDREN (Ref. Want a family with only one child)	-1.8	***	3.3	***	(c)	
MARITAL STATUS (Ref. Married)						
Single in the whole period	-0.1		-1.4	*	0.9	
Single only in 1998	-0.6		-2.1	*	2.2	*
EMPLOYMENT STATUS (Ref. Employed)						
Unemployed	-0.1		-2.1	*	-0.3	
INCOME						
Income mean	0.4		-1.4	*	-0.6	
Income mean squared	-0.4		1.2	*	0.2	
FECUNDITY IMPAIRMENTS (Ref. No impairment)	-0.2		-1.3	**	0.3	
N. CASES	402		190		212	

Note.
* p<0.05; ** p<0.01; *** p<0.001

(a) Models controlled also for gender, age, cohabiting status, union duration, education, religiousness, and actual parity;
(b) Having had a child in the inter-survey period predicts perfectly the outcome variables;
(c) The coefficient is not estimated because the models refer to only those people who did not have any desire for children in 1998;
(d) Only coefficients statistically significant in one of the three models are displayed in the table.

5. Concluding remarks and discussion

The analysis showed that 'child-number desires' is a relevant variable in the childbearing decision-making process. It significantly varies across ages and parities and it is predictive of subsequent reproductive behaviour once people have become a parent.

Moreover, the French data suggest that temporal changes in child-number intentions are very frequent even within a short period of observation like the 5 years of the

longitudinal study. Indeed 44% of the respondents did change their opinion on the intended number of children. Thus, it is very relevant to try to figure out what are the external obstacles, or the intervening factors, that may induce individuals to revise their fertility projects, which is the main research question I tried to answer in the paper.

Downwards revisions (33%) are more likely than upward changes (11%) of child-number desires.

Changes down are significantly positively associated with the total desired family size: the larger the family initially desired, the higher the risk to report a smaller desired number of children in the second wave of the survey (2003). This relationship holds for childless people as well as for respondents who had already children at the first wave of the longitudinal study (1998). But in the latter group it is also very relevant the number of children already had, which indicates how far individuals are in the process of building a family.

On the other hand, upwards changes of initial intended number of children are mostly related to the birth of a child occurred in the inter-survey period that frequently induces respondents who have just become a parent to increase their total desired family size. The result is consistently with the previous research (Miller and Pasta1995b)

This study support the opportunity to include questions on child-number, as well as on child-timing intentions at each wave of the longitudinal study in order to properly measure changes in childbearing intentions and stimulates some important reflections.

First, changing intentions have an important role in explaining the negative gap between actual and ultimately intended fertility. Indeed, the empirical analysis showed that revisions over time of initially reported child-number intentions occur most likely in a downward direction from larger to smaller families. Moreover, the larger the initially planned family size, the more unstable over time are such plans, and, more specifically, the more likely it is that they will be changed downwards. This evidence sends back to the issue —largely debated in the literature— of the questionable predictive power of child-number desires, which indeed appear rather weak in our study. This is in line with the research that questions the importance of child-number desires when the subsequent reproductive behaviour has to be investigated and indicates that unplanned events and other developments during the childbearing career act to weaken the predictive value of original child-number desires (Bongaarts, 1984).
Child-timing desires referred to the next childbearing seems to be a much better indicator of the individuals' subsequent reproductive behaviour, not only they score better in the models for having a child, but they are also less likely to be revised downwards over time, indeed only 16% of respondents with a (short or long term) wish for a child in 1998 did give up to this desire 5 years later, while in the same time span child-number desires were revised downwards by 33% of the respondents.

Second, repeated measures of fertility intentions allow us not only to investigate revised intentions, but also to discriminate the childbearing obstacles in two different groups: those that only impede the birth of a next child (either temporarily or

persistently) but do not change people's reproductive plans, and those that exert a double negative effect on reproduction, by discouraging the transition to parenthood —or to an increased parity— and by encouraging a revision downward of the overall fertility project. Such a distinction is not only an analytical one because it helps to individuate the most striking and insuperable obstacles to childbearing on which the policy intervention may have limited room of action. The French data suggest that these 'strong' impediments are mainly linked to the marital and the employment status of respondents. Indeed, being married or cohabiting, and having a job (not being unemployed) are important precondition for both the fulfillment of the short-term fertility plans and the stability of them over time.

Third, the birth of a child takes a central role in the explanation of changing fertility intentions, which is in line with the sequential, conditional approach of childbearing decision-making process (Namboodiri, 1982). People decide about children one at a time (Udry 1983) and they revise the total number of intended offspring after the birth of a child (Miller and Pasta 1995b). The continuous re-thinking of the family size plans after the birth of a child may justify why the predictive strength of child-number desires appears to be relatively weak as compared to that of child-timing desires (see also Testa and Toulemon 2006). More specifically, the birth of a child exerts a strong positive effect on the wish to additional have children, by increasing the number of children initially desired, no matter whether the birth occurred was planned or mistimed. However, childbirth is practically almost the only change in the individuals' life course occurred in the inter-survey period that I could include as an explanatory variable in the model on changing intentions, beyond the meet of a partner among single respondents, due to the structure of the French data. The high significance of the coefficient of this variable encourages a choice of a life course approach in the studies of fertility intentions and fertility decision-making process. This approach should be accompanied and supported by a dynamic monitoring of the background as well as the response variables, so that information is available not only on any life change but also on the time of such changes. Only in this way we may be able to establish a causal relationship between the life course explanatory variables capturing the individual life's changes and the outcome variable to be studied. In the French study I cannot be rigorously sure that changes in intentions did happen after (and due to) the birth of a child, even though it is plausible and reasonable to assume that the birth of a child preceded upwards changes in intentions.

Finally, postponing the start of childbearing may have a relevant negative repercussion on the stability of total intended family size. According to the findings childless respondents who did not become a parent in the inter-survey period showed at the end of the longitudinal study a lower desired child-number than those declared at the initial wave of the survey in respect to the comparable values declared by those who became new parents. Since the result is also confirmed in the regression analysis, one may argue that postponing the start of a reproductive career has a negative impact on the final intended family size. In a more general way, we could say that delaying childbearing tend to reduce not only the actual quantum but also the intended quantum of fertility. However, this effect is only found fro the first child, while interestingly, the postponement of the second or a higher birth order child does not have a similar comparable negative effect on the final desired family size.

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