THE ONE-CHILD FAMILY:
FRANCE IN THE EUROPEAN CONTEXT

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When men and women are asked about their ideal family size or the number of children they would like to have, the answer is seldom one child. There are many prejudices, based on the work of psychologists, child psychiatrists and other specialists, concerning the difficulties parents are supposed to have in successfully bringing up a child who is "deprived" of a brother or sister[3]. And yet having only one child is much more frequent than generally supposed: in France, for example, this is the case for one woman in five, a proportion that has not greatly changed over time. The false impression of rarity is due to a statistical fact: since, by definition, the number of children from large families is large, we more frequently come across people from families of three children or more than those who are only children, and the latter have almost never been more than 10% of a cohort (Toulemon, 2001).

Why then, despite these prejudices, do so many couples only have one child? Although in some cases, the reason may be "the way things happen" (late union, separation, difficulties in conceiving, etc.), comparison with the United Kingdom, where most probably the same "things happen" but there are barely half the number of one-child families, shows that this gap between the stated desire or ideal and reality is due, at least in part, to deliberate behaviour.

In this article we attempt to describe which women and men have only had one child by identifying the most significant criteria. What is the role of the biological or physiological factors related to a late start to reproduction? The role of specific unions that break down without a new couple being formed? To what extent can these men and women be said to have made a *choice?* Does this happen more frequently in particular socio-occupational categories? What is the role of cultural factors and the influence of family history, such as the size of one's own parents' family? These questions about what socio-cultural factors appear to favour one-child families in France are of particular relevance at a time when this family pattern is spreading across a number of Central European countries and in Southern Europe, notably Italy and Spain. The frequency of one-child families is one reason for the current low level of fertility in these countries, along with a high proportion of childless couples. Although research into the factors associated with childlessness is abundant and relatively longstanding, it is only recently that the demographic literature has contained articles devoted specifically to the characteristics of one-child families and the factors associated with the birth of a second child (see, for example, Jefferies, 2001; Olah 2003, Kreyenfeld and Zabel, 2004; Torr, 2004; Prskawetz and Zagaglia, 2005; Gerster *et al.,* 2007; Parr, 2007). This recent surge in interest is clearly due to the rapid increase in the proportion of one-child families in certain countries.

In the first part of the article, we present an overview of the comparative frequency of childless and single-child women in Europe, using the statistical data we have collected. We then review the various hypotheses that may explain why women and men restrict their number of children to one. Part 3 presents the data and methodology we have used. Finally, we present and discuss the results and our conclusions.

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[3] See for example Tarnero-Pansart, 1999, and books against these prejudices written by journalists who have only one child, in France (e.g. Laufer, 1999) and the United States (McKibben, 1998).

1. One child or none: comparative frequencies changing across Europe.

Statistical sources and caution to be used

To measure the frequency of childless women and mothers of only one child, two types of statistical source may be used.

1) Where BMD (birth, marriage, death) statistics classify births by "biological" order, namely the order of the birth in the mother's life, it is possible by calculating the fertility rate by birth order and mother's age to observe the growth in family size by age and birth order, and at the end of childbearing life, the distribution of women by the number of children they have had can be obtained by successive subtraction. Once the completed fertility by birth order per 100 women is calculated, the percentage of childless women is consequently the difference between 100 and first order fertility, and the percentage of single-child women is the difference between first and second order fertility[4]. It was mainly these data from BMD records that Frejka and Sardon (2004 and 2007) used in their work on fertility by birth order, findings we have largely integrated here, including their projections for recent cohorts. In Germany, where births are ranked by order within marriage, the Federal Institute for Population Research (BiB) carries out reconstitutions to estimate the distribution of women according to the number of children they have had (BiB, 2004). We have used these to illustrate trends in West Germany, although we realise that these figures must be interpreted with caution[5].

2) Censuses and large sample surveys that contain questions about the number of children borne by female respondents provide information for a given date, and the two proportions are calculated directly from the distribution of women by number of live births. We have used this sort of data for Spain (1991 census), Austria (1991 and 2001 censuses), Poland (1991 census) and France (EHF survey, 1999), supplemented where necessary by estimates based on BMD statistics for those cohorts who had not completed their childbearing lives on the census/survey date. Similar statistical data are regularly published by some countries on the basis of their population registers (Finland and Norway).

Although the census and survey data are self-reported, they are sometimes more reliable than statistics from birth registration. This is particularly so in France, where the recording of biological parity introduced in 1989 has produced low-quality statistics that considerably over-estimate the number of first births[6]; we have consequently used the estimates in Toulemon (2001), which are based on the results of the survey carried out at the same time as the 1999 census. This inaccuracy also affects Spain, where first order births are over-estimated in BMD statistics[7]. Even if the bias caused by these classification errors is not as visible as in France, Spanish BMD statistics do tend to under-estimate childlessness by several percentage points (approximately 4 points, if the bias is the same now as in 1975-1990), and to over-estimate even more the percentage of single-child women (7 to 8 points) (Prioux, 1997). For that reason we have not used these parity statistics for Spain or for other

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[4] Completed fertility of first order is the proportion of women who have had at least one child, Completed fertility of second order is the proportion who have had at least two children, etc.

[5] Dorbritz (2005) shows that the extent of childlessness varies according to the author and method of estimation.

[6] For example, in 2006 first order births were reported as 57.5% of total births, a proportion that is totally incompatible with the level of fertility in France. In Norway, which had a fertility rate of 1.9 children per women in 2006, first births were only 42.2% of the total.

[7] We noted this when we compared the fertility calculated from this source in 1975-1990 with the fertility observed for the same cohorts in the 1991 census (Prioux, 1997): although the total number of children born was very similar, the distribution by birth order differed between the two sources, demonstrating a 4%-5% over-estimate of first order births in BMD data (depending on cohort), a 4%-5% under-estimate of second order births, and even higher under-estimated for higher orders births: 7%-8% for 3rd order and 15%-20% for 4th order and above.

countries where BMD statistics clearly under-estimate childlessness (such as Bulgaria, Portugal and Slovenia).

Are one-child families increasing faster than childlessness?

Figure 1 presents the data we have collected for cohorts 1930 to 1970. The most striking feature is the diversity between countries in the frequency of one-child families, unlike a relative homogeneity in childlessness, at least until roughly the 1945 cohort. This contrast between the two sets of values is particularly clear in Western Europe, and in Eastern Europe, where it continued until the 1960s cohorts. Although the rise in childlessness is a fairly general trend among recent cohorts in Europe, this is less true for one-child families, which in some countries are becoming less frequent.
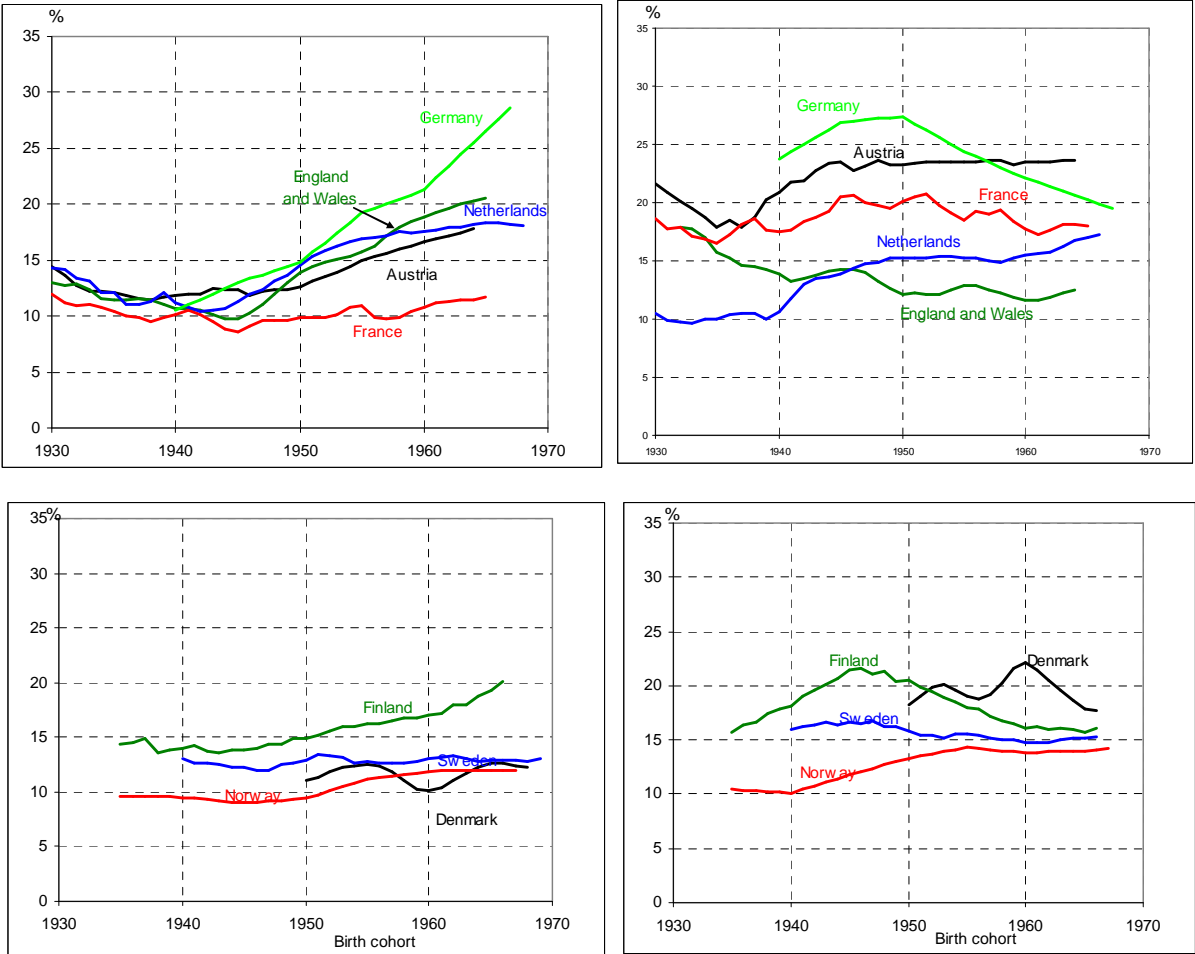

Figure 1. Percentage of childless women (left) and women having had only one child (right) per cohort. Western and Northern Europe.

In Western Europe, the decline in childlessness in the cohorts from 1930 to 1945 is followed by a fairly pronounced rise, except in France, where it is slighter and restricted to the 1960s cohorts. France consequently stands apart from other countries in the region: in Austria, the Netherlands and England & Wales, 18%-20% of women now have no children, and in West Germany the figure appears to exceed 25%[8]. But these similar trends in childlessness in the

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[8] See Note 5 above.

four countries are accompanied by very different levels and trends in the proportion of single-child women. In the 1940 cohort, for example, the percentage of women who had one child is very low in the Netherlands (10%) and England & Wales (14%), but much higher in Austria (22%) and West Germany (24%), countries where there seems to be a longer tradition of one-child families. Subsequently, the rise in childlessness goes with a rise or levelling out of one-child families in Austria and the Netherlands, while in Germany and England & Wales the percentage of mothers of only one child falls. Women born in England & Wales in 1965 present both a high level of childlessness (20%) and the lowest proportion of mothers of only one child (12%-13%), evidence of a certain polarisation in fertility (Ekert *et al.,* 2002): although more women are choosing not to have children, those who choose to almost all have two or more (Jefferies, 2001). It is almost the opposite in France, where it appears that few women choose not to have children at all (Toulemon, 1996), but more women have only one: the proportion of mothers of only one child ranges between 18% and 20%.
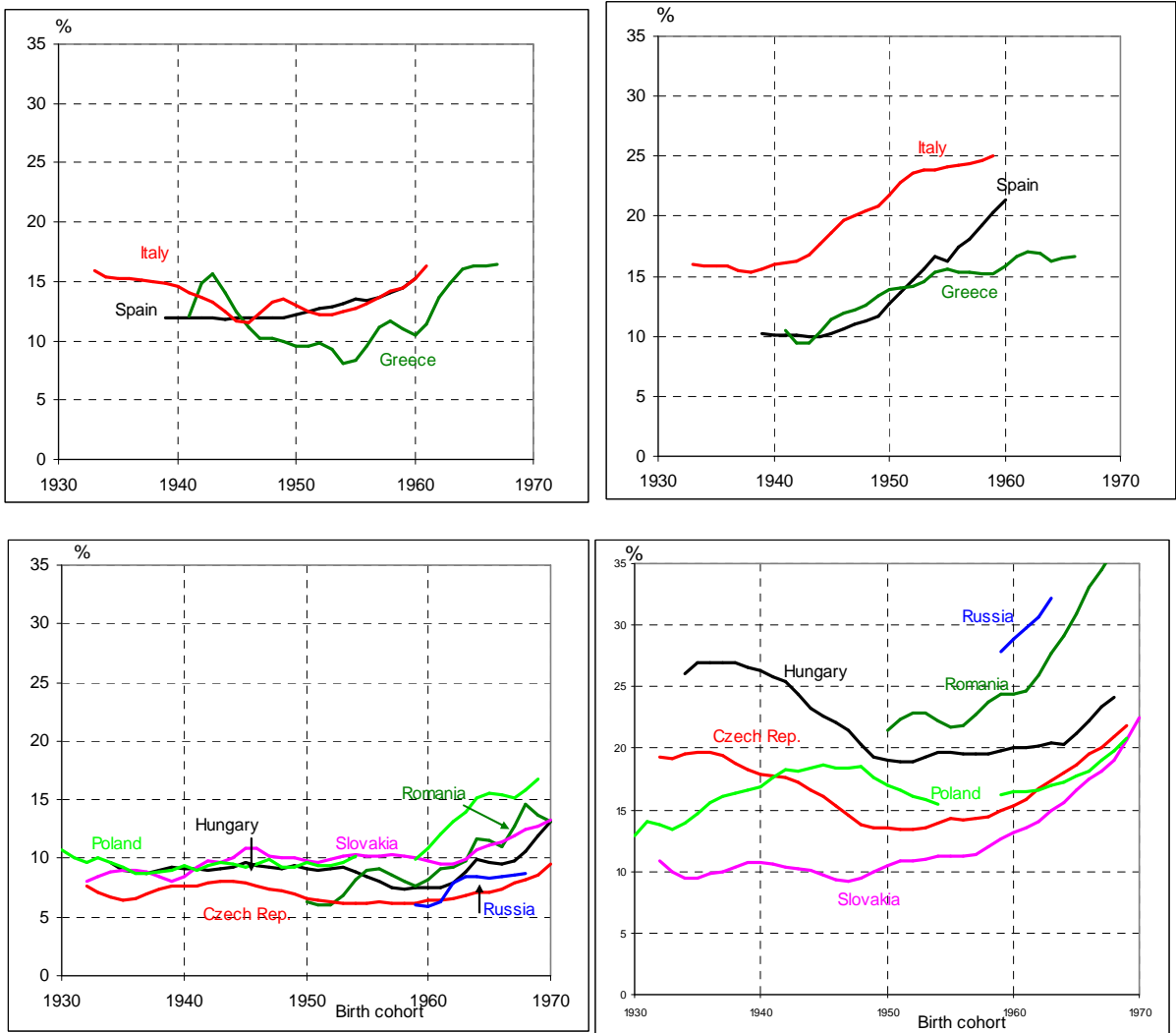

Figure 1 (continued). Percentage of childless women (left) and women having had only one child (right) per cohort. Southern and Eastern Europe.

Among the countries of Northern Europe, Denmark is most similar to France, and Finland comes closer to England & Wales and Germany, although the trends are less sharp. Sweden and in particular Norway possess the specific feature of low childlessness (12%-13% for the 1965 cohort) and a moderate level of mothers of only one child (14%-15%), although both indicators have slightly risen in Norway: in Sweden they have long been the same.

In Italy and Spain, it is the increase in very small families that has caused the decline of completed fertility, rather than childlessness which has risen more recently and less sharply. Once hardly seen in Spain, one-child families have increased rapidly from cohort to cohort. In Italy, one-child families have long been seen in the north of the country (Terra-Abrami and Sorvillo, 1993), and have considerably increased, and the proportion of mothers of only one child is probably more than 25% now. The one-child pattern is spreading much more slowly in Greece, where childlessness appears to have rapidly increased in recent years.

In Eastern Europe, almost all women used to have children. But although the birth of a first child was almost automatic, this was not so for the second, except in Slovakia. The choice of a single child seems to have been particularly prevalent in Hungary, where more than one woman in four born in 1935-1940 had only one child[9]. Similarly, the Czech Republic is clearly distinguished from Slovakia by a higher frequency of only children, which first declined, as in Hungary, until roughly the 1950 cohort. As in Italy and Spain, the decline in family size after the 1955 cohort first took the form of a rapid spread in one-child families (Avdeev, 2003), before childlessness increased in the 1960s cohorts[10].

So where childlessness is low, only children may be fairly common, as if, when social pressure to have children is strong, women stopped procreating once they had done their "duty", or after experiencing motherhood. This was probably true for women born in Central Europe (Austria, Germany and Hungary) in 1930-1940, and was true up to the 1960s cohorts in most of the former Soviet-bloc countries, Italy and Spain. On the other hand, where social pressure to have children is less strong, some women may choose to have none, and the increase in childlessness may be accompanied by a falling proportion of mothers of only one child. This is currently the case in Germany, Finland and, above all, England & Wales, where only children have become rather rare. In these countries, the characteristics of mothers of only one child probably share common points with those of childless women.

But there is a great variety of situations across Europe and an only child is certainly not always an alternative to childlessness; if the one-child family is the result of a desire to restrict family size in order to give the child greater chances of success, then the characteristics of mothers of only one child will differ from those of childless women and are likely to be closer to those of two-child mothers.

What about men?

First, we observe that little is known about fertility levels among men, since almost all fertility measurements concern women. It is therefore hardly surprising that the distribution of men by number of children is rarely known.

In the two countries for which we have found statistics, Finland and France, it is slightly less common for a man than a woman to have only one child (Table 1); conversely, in both countries, childlessness is more common among men and the gap with women has increased

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[9] For Hungary, the Czech Republic and Poland, census data support this contrast between the two indices, which validates the BMD data on parity. However, the parity statistics in Romania and Russia may be slightly biased. In that case, the percentage of one-child families is probably over-estimated, but the increase is indisputable.

[10] Because of the very early timing of first births (except in Poland), the decline in fertility in the 1990s hardly concerned earlier cohorts.

in recent cohorts, especially in Finland; this is evidence of a greater "specialisation" in male fertility, between the fathers of children — on average more children than for mothers — and those who have none. These differences suggest that the factors favouring one-child families are not necessarily the same for men and women.

Table 1. Comparative percentages of men and women having had no children and men and women having had only one child in Finland and France.

Cohort	Finland				France			
	No children		One child		No children		One child	
	Men	Women	Men	Women	Men	Women	Men	Women
1930-34					14.3	11.0	15.9	17.4
1935-39	17.2	14.2	16.6	16.8	12.7	9.8	16.3	17.5
1940-44	16.9	13.9	18.7	19.6	11.4	9.9	18.3	17.7
1945-49	17.0	14.3	17.0	21.2	12.3	9.2	18.0	20.0
1950-54	21.7	15.5	16.8	19.5	13.5	10.2	17.6	19.6
1955-59	24.5	16.5	15.2	17.3				

Sources: Tilastokeskus/Statistics Finland, 2007, and Toulemon, 2005.

In the rest of this article we examine the characteristics of one-child families in France, covering both men and women.

2. A few working hypotheses

In looking for factors likely to lead to the development of one-child families, we compare the characteristics of the mothers and fathers of only one child with those who went on to have more children.

Age and living as a couple, the most determining factors

First, we sought to distinguish the factors that involuntarily lead men or women to have only one child from those that appear to be the result of a choice; the first category would contain factors related to age and the status of the couple. A late first birth, particularly for a woman over 35, considerably reduces the possibility of having a second child. The same is true when the union in which the first child was born has broken down or when the first child was born outside a union, if a further union does not occur or only occurs long after. In practice, age and living as a couple are the most determining factors, as we shall see below.

However, it is hard to claim that all late first births and all union breakdowns are involuntary; it would be a mistake to suppose that these behaviours are totally independent of the attitudes of the people concerned towards the family and children. Consequently, we decided not to consider these factors as being a "non-choice" of only one child.

But since these two factors are preponderant and strongly determine the likelihood of having only one child, we have attempted to move away from them by also analysing those men and women who had their first child at a sufficiently early age and within a stable union that did not reduce the chances of a second birth (see below).

The other factors likely to influence the frequency of only children may be put under three headings: childhood experience, personal characteristics of the adult, and those of the spouse and couple.

Childhood socialisation

We hypothesise that, as for fertility in general, childhood socialisation and experience (number of siblings, religious practice, nationality, region of domicile, social background, parental separation) influence the likelihood of having only one child:

- It is known that *the number of siblings* of men and women correlates fairly well with their level of fertility (Desplanques, 1987), and the likelihood of having a third child is higher if one had brothers and sisters (Breton and Prioux, 2005). We tested whether the fact of being an only child predisposes people to have only one child.

- We hypothesise that *people of foreign origin* from countries where fertility is high and the two-child family pattern is rare are, on the contrary, less likely to have only one child.

- We also hypothesise that the people from the French *regions* where fertility has traditionally been highest (Northern and Western France) are less likely to have only one child than people from the South-West, a less fertile region.

- In France, the self-employed, shop-keepers and men in the "intermediate occupations" have more often restricted their number of children to one than have farmers, manual workers and managerial workers (Desplanques, 1987 and 1994). We tested whether this tendency to limit family size has been transmitted to their children, even if they are not themselves only children.

- Since most religions support family values, the fact of having had a religious education and *regular*, if only occasional, *practice* is likely to be associated with a lower frequency of only children.

- We tested whether the fact of not having spent one's entire childhood with both parents predisposes one to have only one child. One may suppose that the children of separated couples are perhaps less attached to family values, or more hesitant to have more than one child, anticipating that the couple may break down.

Individual's personal characteristics

Apart from age, mentioned above, we examined the influence of educational qualifications, occupation and opinions expressed by men and women about aspects of family life.

- Among the characteristics likely to influence having (or not having) a second child, *educational level* has been by far the most studied, particularly for *women*. Almost all this research concludes that higher educational qualifications favour the more rapid birth of a second child (Gester *et al.,* 2007; Kravdal, 2007; Kreyenfeld and Zabel, 2005), except in Hungary (Olah, 2003). In some cases, however, such as Austria and Germany, the effect seems to be more closely linked to the husband's qualifications, since the two spouses usually have similar qualifications (Kreyenfeld, 2002; Prskawetz and Zagaglia, 2005; Köppen, 2006). But with the methodology used in this research (all based on duration modelling), it is hard to tell if the relative risks calculated are due only to differences between educational levels in the timing of the second birth or whether the frequency of the second birth occurring is also affected. In England & Wales, for example, Rendall and Smallwood (2003) show that, although more highly educated mothers have their second child sooner, they do not ultimately have more second children, and sometimes fewer, than unqualified women (Berrington, 2004). In France, Köppen (2006), using the 1994 FFS survey, concludes that there is a positive effect of higher qualifications on the likelihood of a rapid second birth—which is also observed for unqualified women—but there are no conclusions as to the final frequency of parity 2.

As to the likelihood of having only one child, one might expect to find a non-linear effect of qualifications in France, as for the birth of a third child after the second (Breton and Prioux, 2005): a negative effect for the most highly qualified women and those without qualifications, and a positive effect for women with an intermediate level of qualification, who are more inclined to limit family size.

- The effect of *men's educational qualifications* on having a second child has less often been the subject of direct research. Although in Norway, as for women, a high educational level appears to result in the rapid birth of a second child among men (Kravdal, 2007), in Sweden and Hungary, men's qualifications do not have a significant influence (Olah, 2003). It is as the husbands or companions of the women observed that the effect of men's educational qualifications is usually analysed, and generally a positive effect is found, as, for example, in Denmark (Gerster *et al.,* 2007), France (Köppen, 2006) and Germany (Kreyenfeld and Zabel, 2005); in Germany and Austria it even appears that the husband's educational qualifications are more important than his wife's (Kreyenfeld, 2002; Köppen, 2006; Prskawetz and Zagaglia, 2005). In the United Kingdom, however, there is no significant effect (Kreyenfeld and Zabel, 2005).

As for French men's likelihood of having only one child, we make the same hypothesis as for women, and postulate a non-linear relationship with educational qualifications.

- *Working life and occupation*: for women, who in France continue to take on most domestic and parental tasks (Brousse, 1999), working outside the home is still difficult to reconcile with bringing up children. Those women who have never gone out to work and those who stopped work after the birth of their first child are therefore less likely to have restricted their family size to one child. But a woman's occupation may also have an influence, according to how far it can be reconciled with parenthood. This might be the case, for example, with professional women and managers, because a position of responsibility is hard to reconcile with bringing up more than one child; unless a large part of the work can be delegated to paid help, which should be easier to pay for since the mother's income is theoretically higher. Indeed according to earlier research, women in France who were in professional positions when they married less frequently have only one child than clerical and sales workers, the self-employed and shopkeepers (Desplanques, 1987 and 1994). We tested whether this is still so.

As for men's occupations, we tested whether earlier patterns are still valid: does being self-employed, a small shopkeeper or in an "intermediate occupation" still predispose a man to have only one child more often than being a farmer, manual worker or professional?

- *Attitudes and opinions* about marriage or the respective roles of men and women in working and family life can also reveal a greater or lesser predisposition to choose to restrict family size. We hypothesise that people stating the most traditional opinions are less inclined to restrict their family size to one child.

Characteristics of spouse and couple

As far as possible, we attempted also to consider the personal characteristics of the spouse (occupation, child[ren] from a previous union), and those of the couple (age difference, length of union and marital status at first birth).

- Where we were unable to take into consideration the spouse's educational qualifications, which as we have seen may in some cases have a determining influence, we considered *socio-occupational category,* making the same hypotheses as above, adapted to the gender of the spouse.

- We hypothesise that when a man or a woman have had their first child with a *spouse who already had one or more children*, there is a greater likelihood that they will only have one child. We also postulate that this relationship will be higher for men—who are more likely to live with stepchildren—than for women.

- The *age difference* between the spouses may reveal the degree of egalitarianism in attitudes towards couple relations (Bozon, 1991). Research has shown that the division between spouses of domestic and parental tasks has an influence on the likelihood of having a second child. In Hungary and Sweden, an overly inegalitarian attitude does not favour a second birth in the case of women (Olah, 2003); on the other hand, in the United States, in couples both of whom go out to work, it is those whose division of tasks is intermediate between "traditional" (women doing at least 85%) and "modern" (less than 54%) who are less likely to have a second child (Torr and Short, 2004).

  In the absence of adequate data on the domestic arrangements of the couples under study[11], we used the age difference between spouses to characterise the degree of equality in their relationship, and hypothesised that the most inegalitarian couples (where the man is at least two years older than his wife), and therefore the most traditional, less frequently have only one child.

- The *status of the couple at the time of the first birth* is also likely to correlate with the likelihood of having a second child. We hypothesised that the fact of having a first child fairly soon after forming a couple, and/or the fact of being married at the time of that birth, demonstrate a stronger attachment to family values and consequently predisposes people less to have only one child.

3. Data and method

Two complementary household surveys: EHF 1999 and ERFI 2005

The results presented are based on two French surveys of differing size and nature. The first is the 1999 family survey (EHF[12]), a biographical survey carried out with the census and involving nearly 400,000 men and women. This self-administered survey does not contain a large number of variables, but the size of the sample gives it considerable authority in studying family trends in France. Historically these family surveys have been used for studies of fertility by parity (Desplanques, 2005). The second survey used is more recent and was the first wave of the French survey in the European GGS project carried out at the end of 2005, known as ERFI[13]. Its size was more traditional (approximately 10,000 men and women) and it was carried out face-to-face. The EHF survey, by its sample size and design, is representative at regional level, whereas the ERFI survey is only representative of the households living in Metropolitan France at the end of 2005. We gave both survey samples weighting coefficients[14] that partly correct for the under-representation of particular categories such as the youngest, the least educated, the foreign-born and the unmarried. The two sources complement each other:

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[11] Although these data are available in the GGS-ERFI survey, we chose not to use them because of serious risks of bias, since they concern the division of tasks between spouses at the time of the survey and not after the first birth. Furthermore, we had no data where the respondent was not currently living in a couple, even if their union had lasted at least ten years after the first birth.

[12] *Etude de l'Histoire Familiale,* family history study.

[13] GGS: Generations and Gender Survey; ERFI: *Etude sur les Relations Familiales et Intergenerationnelles,* family and intergenerational relations study.

[14] The weighting coefficients were standardised each time to take account of the original size.

- EHF can be used to test most of the hypotheses concerning the characteristics of individuals and couples;

- ERFI can be used to test further hypotheses relating to the individual: family history, attitude to religion, opinions on male-female relations or the work/life balance; and other hypotheses relating to the couple: rank of the union and age difference between spouses in particular.

This study does not cover the whole of these samples but only those men and women who had a first child between 1970 and 1988 from EHF (n = 107,579) and 1980 and 1995 from ERFI (n = 2,023). We then used the results of descriptive statistics and regressions to compare the proportion or likelihood of people not having a second child during the ten years that followed the birth of their first. The ten-year period was chosen for an objective reason: fewer than 3% of rank 2 births following a first birth registered between 1970 and 1985 occurred after more than ten years[15].

First approach: descriptive statistics

First we used descriptive statistics to answer the preliminary question in our research: who are the women and men in France who correspond to the one-child pattern? To that end we measured two indicators within two different "k" subpopulations (Table 2):

- the frequency of people who did not have a second child within ten years of the birth of the first, *"$f_{i,k}$"*
- the weight of modality "k" in the population of people having only one child ten years after the birth of the first, *"$p_{i,k}$"*

$$\text{Pr}\,évalence = p_{i,k} = \frac{N * f_{i,k} * u_{i,k}}{f_i * N} = \frac{f_{i,k} * u_{i,k}}{f_i} \quad \text{where}$$

$f_{i,k}$: frequency of modality "k" in the total population
$u_{i,k}$: frequency of the one-child pattern among individuals belonging to modality "k"
f_i: frequency of the one-child pattern in the total population
N: number of total population

The subpopulations whose risk of having only one child (f_{ik}) is far from the average risk are "automatically" associated with rare profiles. The frequency of the one-child pattern may be very high for a given modality "k" but only represent a very small number of people with only one child. The reason is that in the general population, the parents with only one child most often encountered are those whose p_{ik} value is high, and not necessarily those belonging to a population in which one child only is frequent (f_{ik}). The two indicators in the table do indeed measure two different things: $f_{i,k}$ is a measurement close to a risk and $p_{i,k}$ is close to a prevalence.

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[15] This proportion is even less than 2.5% for women who had a first child within a union before the age of 35, whose union lasted at least ten years after the first birth (a population group able to have a second child).

Second approach: regressions

In order to refine our answer to the question of who the women and men are who *choose* or *decide* to have only one child, we then ran a number of regressions on the subpopulation of men and women who had had their first child
- early enough not to come up against physiological barriers, and
- within a couple that lasted at least ten years after the first order birth[16].

The purpose of the regressions was to test the various hypotheses made above, largely on the basis of a review of the European literature. The dependent variable is an indicator of not having (Y=1) or having (Y=0) a second child within the ten years after a first birth. The methodology used for these regressions was forward selection, setting a significance level for the variables in the model (Instruction SAS: *Selection=Forward sle=0.05[17] for EHF and sle=0.15 for ERFI*). This procedure classifies variables from most to least significant to explain the probability of stopping after a first child.

We chose to run regressions rather than construct duration models because we were only interested here in the characteristics of those people who do not have a second child, and not those characteristics that favour the earlier or later timing of a second child[18].

Almost all the explanatory variables in the models tested were described in the preceding section, except for the rank of the respondent's union in which the first child was born.

Synthetic variables were also specifically constructed both to improve the quality of interpretation and to combine variables of attitudes, religious values and practice on the basis of answers given in ERFI.

- A variable combining *highest qualification obtained and age at first birth*. Very few births occur in France during the mother's education and consequently age at first birth largely depends on educational level. In order to allow for this correlation, we constructed a variable using three levels of qualification: none or lower than CAP (vocational certificate); CAP to *baccalauréat* (school-leaving certificate); and higher than *baccalauréat*. In each group we distinguished between those who had their first child before that group's median age and those who did so after that age[19].

- A variable concerning *religious affiliation and practice*, which distinguishes between three categories: practising, even occasionally (attending a religious service at least once a year other than ceremonies as weddings, funerals and baptisms), non-practising, and those who state no past or present religious affiliation.

- A variable reflecting a *traditional attitude* towards the family and relations within couples. Respondents are classified as "traditional" if they agree with at least one of the following statements: "In a couple, it is better when the man is older than the woman"; "If

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[16] Here the numbers are smaller. The regression applies to 33,349 men and 50,561 women from EHF 1999 and 574 men and 834 women from ERFI 2005. This reduction in numbers is mainly due to specific union histories. For example, women in the parity 1 cohorts aged 35 and over represent less than 3% of cohorts. On the other hand, just over 20% of the women had separated before the first child was ten years old or were not in a union at the time of the first birth.

[17] Sle=0.05 means that only those variables with a first-stage probability of 5% are selected. This probability is not to be confused with those given in Tables 3 and 4, which correspond to variable modalities.

[18] Age at first birth affects both the frequency and timing of second births: the later women bear their first child, the less frequently they have a second one (Table 2), but when they do have a second child, it is sooner (average interval of 2.7 years between first two births in the parity 1 1980-1989 cohort compared with 3.6 years, depending on whether the woman is aged 20-24 or 35-39 at the time of the first birth.

[19] This construction only partly neutralises the effect of qualifications, because the older members across the three categories have on average higher qualifications.

parents divorce, it is better for a child to stay with their mother than their father"; "Marriage is a life-long bond that should never be broken".

- A variable reflecting *opinion on mothers' labour force participation*. Respondents are classified as less favourable to women's paid work if they agree with at least one of the following statements: "A child of pre-school age is likely to suffer from their mother going out to work"; "Looking after the house or family is as rewarding as working to earn money"; "When employment is scarce, men should have priority over women in getting a job".

In each case, we compared male and female models. Unfortunately none of the models test all the explanatory variables: some variables in ERFI are not available in EHF99, such as age gap between spouses, variables of opinion and values, and religious practice.

4. Results

Descriptive statistics

The descriptive statistics confirm that the two subpopulations that most often have only one child are those who are oldest when the first child is born and those who at the birth of their first child were not living as a couple, or whose union broke down in the ten years following the birth (table 2). The age effect is stronger for women than for men: a man who is relatively old when his first child is born may not be affected by the age factor if his spouse is sufficiently young. Of the various situations and histories of couples, the frequency of a single child is highly correlated with the time they live together after the first birth.

In addition to the effects of age and couple's history, other criteria correlate with a high frequency of the one-child pattern: nationality[20], (particularly non-EU European), having been an only child, having one's first child with a spouse who already had at least one child, and not being married at the time of the first birth. Conversely, it is relatively rare to have only one child in the case of those of an African nationality, those who had a large number of siblings, women who were not economically active at the time of the first birth and even more so those who had never worked, and men and women whose first child died prematurely. Region of domicile is also an important factor: the one-child pattern is most frequent in South-West and South-East France, and least frequent in Western France. The effect of qualifications is shown in an inverted U-curve, with a single child being less frequent among the unqualified and graduates than among those with intermediate qualifications. Finally, with respect to social background and occupation at the time of the survey, a farming background still presents the lowest proportion of one-child families, including among the children of farmers, whereas for a woman, having a professional status job or being self-employed in the non-farm sector more often correlates with a single child.

The contrast between men and women, other than in age, is fairly slight, except for the group of women in management and the intellectual professions, who are much less likely to have only one child than men in that category. The fairly high proportion also of mothers of only one child among those who did not stop working at the time of the first birth confirms the problem of the compatibility between a larger family and a career, and the correlation between career and the desire to have another child.

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[20] Nationality here means nationality at birth, whether or not the respondent had been naturalised French at the time of the survey.

Table 2. Proportion of men and women who still have only one child ten years after the first birth ($f_{i,k}$) and proportion of each of the subpopulations among parents of a single child ($p_{i,k}$). Men and women, 1970-1989.

	Women				Men			
	Year of birth of first child							
	1970-79		**1980-89**		**1970-79**		**1980-89**	
	$f_{i,k}$	$p_{i,k}$	$f_{i,k}$	$p_{i,k}$	$f_{i,k}$	$p_{i,k}$	$f_{i,k}$	$p_{i,k}$
Age at first birth								
under 20	*16%*	*9%*	*15%*	*5%*	19%	2%	22%	2%
20-24	19%	*42%*	*16%*	*30%*	17%	*29%*	17%	*20%*
25-29	27%	32%	24%	36%	22%	40%	18%	38%
30-34	**44%**	**12%**	**42%**	**19%**	**32%**	**18%**	**29%**	**25%**
35-39	**60%**	**4%**	**67%**	**8%**	**42%**	**7%**	**43%**	**10%**
40 and above	**86%**	**2%**	**87%**	**2%**	**53%**	**4%**	**52%**	**5%**
Union status and history after first birth								
No union at time of first birth	**51%**	**7%**	**55%**	**7%**	**30%**	**3%**	**41%**	**3%**
Stable union for 10 years	20%	68%	18%	58%	21%	77%	18%	65%
Union breakdown and no new couple	**41%**	**12%**	**43%**	**18%**	**39%**	**8%**	**45%**	**15%**
Union breakdown and new couple	**28%**	**5%**	25%	**7%**	**29%**	**5%**	**29%**	**7%**
Other	25%	8%	**29%**	11%	26%	8%	**28%**	9%
Nationality at birth								
France	24%	91%	24%	91%	23%	92%	23%	90%
EU country	22%	5%	22%	5%	18%	4%	22%	5%
Other European country	**28%**	**1%**	**35%**	**1%**	**35%**	**1%**	26%	**1%**
North Africa	*8%*	*1%*	*11%*	*1%*	*7%*	*1%*	*11%*	*2%*
Other African country	*14%*	*0%*	*12%*	*1%*	*6%*	*0%*	*12%*	*1%*
Other	*18%*	*1%*	*15%*	*1%*	*16%*	*1%*	*15%*	*1%*
Sex of first child								
Boy	24%	52%	23%	51%	23%	52%	22%	50%
Girl	23%	48%	24%	49%	22%	48%	22%	50%
Own sibship size								
Only child	**32%**	**12%**	**30%**	**10%**	**29%**	**12%**	27%	**10%**
2 or 3 children	26%	40%	25%	43%	25%	43%	24%	44%
4 or 5 children	22%	26%	22%	26%	21%	25%	21%	26%
6 and more children	19%	*22%*	19%	*21%*	17%	*20%*	18%	*20%*
Socio-occupational category								
Farmer	*16%*	*2%*	19%	*1%*	*16%*	*3%*	18%	*3%*
Non-farm self-employed	26%	**5%**	26%	**5%**	25%	12%	22%	10%
Higher-level occupations	25%	8%	27%	8%	21%	16%	19%	14%
Intermediate occupations	26%	21%	25%	22%	24%	24%	24%	24%
Clerical and sales worker	24%	49%	23%	50%	24%	12%	24%	12%
Manual worker	24%	14%	24%	12%	22%	32%	22%	37%
No economic activity	*9%*	*2%*	*9%*	*2%*	18%	0%	19%	0%
Highest qualification								
None	20%	21%	20%	21%	19%	19%	20%	20%
Below CAP (Primary school certificate)	25%	32%	27%	20%	25%	23%	27%	18%
CAP or BEP certificate (lower vocational)	26%	25%	24%	28%	23%	33%	23%	36%
Baccalauréat (high school diploma)	24%	11%	25%	15%	26%	11%	22%	11%
Higher education	21%	12%	21%	17%	19%	*14%*	18%	*15%*
Working history close to first birth								
Not working at 1st birth	17%	*15%*	17%	*16%*	**16%**	*3%*	20%	*3%*
Stopped work in year of 1st birth	17%	7%	20%	7%	39%	0%	25%	1%
Did not stop work at 1st birth	26%	78%	25%	78%	23%	97%	22%	97%

Table 2 (continued). Proportion of men and women who still have only one child ten years after the first birth ($f_{i,k}$) and proportion of each of the subpopulations among parents of a single child ($p_{i,k}$). Men and women, 1970-1989.

	Women				Men			
	Year of birth of first child							
	1970-79		1980-89		1970-79		1980-89	
	$f_{i,k}$	$p_{i,k}$	$f_{i,k}$	$p_{i,k}$	$f_{i,k}$	$p_{i,k}$	$f_{i,k}$	$p_{i,k}$
Marital status at first birth								
Married	22%	74%	20%	60%	22%	77%	20%	64%
Unmarried	**29%**	**26%**	**30%**	**40%**	26%	**23%**	27%	**36%**
Region of residence *								
Ile de France	26%	21%	25%	20%	25%	21%	22%	18%
Centre –North	22%	17%	21%	17%	21%	18%	22%	18%
Nord–Pas de Calais	21%	6%	21%	6%	18%	6%	20%	6%
East – North-East	25%	10%	25%	10%	24%	9%	23%	10%
West	*15%*	*9%*	*16%*	*9%*	*16%*	*10%*	*16%*	*9%*
South-West	27%	**12%**	27%	**12%**	25%	**11%**	**28%**	13%
Rhône Alpes, Auvergne	23%	11%	24%	12%	23%	12%	21%	11%
South-East	**28%**	**14%**	27%	**14%**	27%	**13%**	26%	**14%**
Parental status of spouse before first birth								
had child(ren)	**37%***	**5% ***	**39%**	**8%**	**39%**	**5%**	**46%**	**9%**
had no child(ren)	23%	95%	22%	92%	22%	95%	21%	91%
Early death of first child								
No death or after 10 years	24%	100%	23%	100%	23%	100%	22%	100%
Within 9 years	*9%*	*0%*	*15%*	*0%*	*8%*	*0%*	*5%*	*0%*
Father's socio-occupational category								
Active, unspecified former active, other	23%	11%	23%	10%	22%	11%	24%	12%
Working farmer	20%	12%	20%	9%	17%	12%	18%	9%
Non-farm self-employed	24%	11%	23%	12%	25%	12%	21%	11%
Higher-level occupations	21%	5%	22%	7%	21%	6%	19%	7%
Intermediate occupations	25%	8%	24%	10%	24%	8%	22%	9%
Clerical and sales worker	25%	15%	26%	16%	24%	15%	25%	17%
Manual worker	24%	37%	23%	37%	23%	35%	23%	36%
Spouse's socio-occupational category								
Unspecified former active, no reply	**34%**	**15%**	**37%**	**16%**	20%	16%	23%	17%
Working farmer	*15%*	2%	*16%*	2%	*15%*	1%	*16%*	1%
Non-farm self-employed	23%	**10%**	26%	**10%**	29%	5%	**28%**	4%
Higher-level occupations	21%	11%	20%	10%	25%	4%	20%	4%
Intermediate occupations	25%	20%	23%	18%	23%	18%	20%	17%
Clerical and sales worker	24%	15%	23%	16%	23%	44%	22%	46%
Manual worker	20%	27%	20%	28%	21%	12%	21%	11%
Total	**23%**		**23%**		**22%**		**22%**	

Population of reference : Women and men who had their first child between 1970 and 1989.
Source : EHF99 survey
Lecture : $f_{i,k}$ – 37% of women who had their first child between 1970 and 1989 whose spouse had already had at least one child stop at one child, compared with 39% of men. $p_{i,k}$ – On the other hand, of the women who did not have a second child within ten years of the first, only 5% were women whose spouse had already had at least one child.
Given in **bold** are the $f_{i,k}$ proportions furthest from the average frequency (in *italics* the lowest values). This is not a level of significance since as a result of the numbers involved, proportion tests show that almost all the observed differences are significant.
*Relationship to French *administrative* regions:
***Ile de France*, Centre – North** (*Champagne Ardenne, Picardie, Haute-Normandie, Basse-Normandie, Centre, Bourgogne*)**, *Nord–Pas de Calais*, East – North-East** (*Lorraine, Alsace, Franche-Comté*), **West** (*Pays de la Loire, Bretagne, Poitou-Charentes*), **South-West** (*Aquitaine, Midi-Pyrénées, Limousin*)**, Centre-South** (*Rhône-Alpes, Auvergne*), **South-East** (*Provence-Alpes-Côte d'Azur, Languedoc-Roussillon, Corse*)

The descriptive statistics show that the characteristics of one-child parents are close to those traditionally associated with low fertility, supporting the importance of this type of study in the European context of more general low-fertility pattern and a developing one-child pattern. They also show that the percentage of fathers and mothers of only one child has not increased in France, despite an increase in the factors correlated with the one-child pattern (columns $p_{i,t}$ in Table 2): first births after the age of 30, union breakdown, couples unmarried at the time of the first birth or where one spouse already has a child from a previous union.

Multivariate analysis

The interpretation of the descriptive statistics is difficult because of links between variables, particularly with union breakdown and age, which are determining factors for the likelihood of having a second child. Take the example of men and women who were unmarried at the time of the birth of their first child. The proportion of those who remain one-child parents is particularly large, but this may be because of a higher frequency of separations. Multivariate analysis is used to test if the effect of marriage is always significant, *ceteris paribus,* controlling for the factor of separation.

In the regressions presented here, some variables from Table 2 are not given, either because they were not significant in any of the models (such as the sex of the first child[21]), or because they do not apparently depend on structural effects (early death of first child). Nor did we introduce work career, which is collinear with the socio-occupational category: all the women who have never worked belong to the socio-occupational category "inactive".

EHF SURVEY

The risk of stopping at one child is declining in stable couples
Contrary to the empirical observation in Table 2, *ceteris paribus* analysis reveals a significant cohort effect; the likelihood of having only one child fell from the 1970s to 1980s (Odds Ratio=0.7), taking stable couples only. This confirms that the stability of the general proportion is due to the increase in structural factors favouring a single child being compensated for by a lower percentage of only children in particular subcategories (stable couples, first birth before 35).

Effect of postponing first child after completing education
In regressions run before those presented here, the effects of age and educational qualifications were consistent with those in Table 2: an upward correlation between age at first birth and the risk of not having a second child and a inverse U-shaped correlation between education and that same risk. The final regression (Table 3) contains the variable combining age at first birth and the highest qualification obtained. For the least qualified and those with intermediate qualifications, the likelihood of having only one child is higher for those individuals who had their first child relatively late (OR∈[1.5; 1.7]). They are probably those who choose or are obliged to take more time in forming a stable couple or obtaining a stable first job. If it is a choice, these people would be the least "family" minded because of their level of education or the values they hold.

For the most qualified women and men, relatively high age at first birth does not significantly correlate with a high likelihood of having only one child. Conversely, having a first child while relatively young does indeed reduce the likelihood of having only one child compared with the least qualified (OR∈[0.7; 0.8]). In France therefore, among men and women,

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[21] This confirms that there is no sex bias in France, as we have already shown for the likelihood of the arrival of a third child, which is the same whether the first two are both girls or both boys (Breton and Prioux, 2005).

educational qualifications have the same positive effect on the birth of a second child as in most European countries (see Part 2, above).

Socio-occupational category: differences between the sexes
The effect of socio-occupational category and social background is measured along three dimensions: the respondent's socio-occupational category, that of their spouse (most recent or current)[22], and that of their father. The three dimensions are connected by social reproduction between generations and the social endogamy of couples. Using all three reduces the effects of each variable and can be used to identify the most significant effects, particularly differences between the sexes.

The hypothesis of social reproduction of behaviour is not confirmed, except for the daughters of managerial or professional fathers, who are less likely to have only one child that all the other categories (OR=0.6, compared with 0.8 or 0.9). Conversely, the children of manual workers (the reference for father's occupation) are most likely to have only one child; the same is true for the men and women who are manual workers and those women whose spouse is a manual worker. The high fertility of manual workers in France is apparently supported, therefore, by the fertility of foreign-born manual workers, because among manual workers of French nationality (reference), the likelihood of having only one child is high, probably because an only child has greater chances of upward social mobility.

The model confirms that the situations correlating with the lowest likelihood of having only one child are those of couples where the woman has always been economically inactive (OR=0.6 or 0.7), or the man is a farmer or professional (OR=0.7 or 0.8). Conversely, those men whose spouse is self-employed in the non-farm sector have the highest likelihood of having only one child (OR=1.4). These differences between the sexes show that in France, as in other European countries, "career" and "family" are not necessarily compatible for certain occupational categories.

Geographical origin and regional features
The effect of nationality is significant and particularly high in groups from Africa, especially men from North Africa (OR=0.2). Women and men of non-EU European nationality, unlike what is observed in Table 2, are not more likely to adopt the one-child pattern than the French. However, in the countries concerned, this model is traditionally quite frequent (Figure 1). EU Europeans according to this regression apparently adopt the one-child pattern less often. The effect is slight (OR= 0.8 or 0.9).

The effect of the French region of domicile[23] is confirmed by the model. Controlling for structural effects, residents in Western France stand out for their low adoption of the one-child pattern (OR=0.5 or 0.6), and it is in South-West France that the likelihood of having only one child is highest (OR=1.1 or 1.2).

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[22] In the EHF survey, respondents were asked about the socio-occupational category of their current or most recent spouse. In the vast majority of cases, the current or most recent spouse was the father of the 1st child. This is a good proxy for partner's social category.
[23] Some of the respondents living in the region at the time of the survey were living in another region at the time of the birth of their first child. However, apart from Ile-de-France, some 80% or 90% of men and women were also born in the region of domicile (authors' calculations).

Table 3. Probability of stopping at one child, semi-log model

Men and women who had their first child between 1970 and 1989 before the age of 35 (women) / 40 (men) within a union that lasted at least 10 years after that first birth

		Women		Men	
		OR	p	OR	p
Year of birth of first child	1970-79 (Ref)		ref		ref
	1980-89	0.7	***	0,7	***
Education and age	No or few qualifications and first child relatively early	0.9	*	1	-
	No or few qualifications and first child relatively late	1.7	***	1,5	***
	Intermediate qualifications and first child relatively early		*ref*		*ref*
	Intermediate qualifications and first child relatively late	1.6	***	1,7	***
	Higher qualifications and first child relatively early	0.7	***	0,8	***
	Higher qualifications and first child relatively late	0.9	-	1,1	-
Nationality	*French*		*ref*		*ref*
	EU national	0.9	***	0,8	***
	Other European	1.3	*	1,2	-
	North African	0.2	***	0,2	***
	Other African	0.3	***	0,2	***
	Other	0.6	***	0,5	***
Region of domicile	*Ile de France*		*ref*		*ref*
	North-Centre	0.9	***	0,9	**
	Nord-Pas de Calais	0.9	*	0,9	*
	East–North-East	1.1	**	1,1	-
	West	0.5	***	0,6	***
	South-West	1.2	***	1,1	**
	Rhône-Alpes	0.9	***	0,9	*
	South-East	1.1	-	1,1	*
Own sibship size	Only child	1.4	***	1,2	***
	2 or 3 children		*ref*		*ref*
	4 or 5 children	0.8	***	0,8	***
	6 and more children	0.8	***	0,7	***
Marital status at first birth	*Married*		*ref*		*ref*
	Unmarried	1.3	***	1,3	***
Time between couple formation and first child	0-1 years	0.5	***	0,5	***
	2 years	0.5	***	0,6	***
	3 and more years		*ref*		*ref*
Parent status of spouse	Spouse already a parent	2.3	***	3,3	***
	Spouse with no children		*ref*		*ref*

Table 3 (continued). Probability of stopping at one child, semi-log model
Men and women who had their first child between 1970 and 1989 before the age of 35 (women) / 40 (men)
within a union that lasted at least 10 years after that first birth

		Women		Men	
		OR	p	OR	P
Father's socio-occupational category	Formerly economically active	0.8	***	0,9	**
	Farmer	0.8	***	0,8	***
	Non-farm self-employed	0.8	***	1	-
	Higher-level occupations	0.6	***	0,8	***
	Intermediate occupations	0.8	***	0,9	*
	Clerical and sales workers	0.9	**	1	-
	Manual workers		*ref*		*ref*
Respondent's own socio-occupational category	Farmer	0.9	-	0,8	**
	Non-farm self-employed	1.1	**	0,9	*
	Higher-level occupations	1.1	**	0,8	***
	Intermediate occupations	1.1	***	0,9	**
	Clerical and sales workers		*ref*	*0,9*	**
	Manual workers	1.2	***		*ref*
	No economic activity	0.6	***	0,7	-
Current or last spouse's socio-occupational category	Unknown	1.1	*	0,9	**
	Farmer	0.7	***	0,8	-
	Non-farm self-employed	1	-	1,4	***
	Higher-level occupations	0.7	***	1	-
	Intermediate occupations	1	-	0,9	***
	Clerical and sales workers	1	-		*ref*
	Manual workers		*ref*	1	-
	At home, students, etc.	0.9	-	0,7	***

Significance levels, ***: p < 0.01; **: p between 0.01 and 0.05; *: p between 0.05 and 0.1.
Female model: -2 Log L = 44 516 / % concordant pairs = 69%
Male model: -2 Log L = 30 257 / % concordant pairs = 69%
Population of reference: women under 35 and men under 40 at the time of first birth, whose couples lasted at least ten years after first birth. 50,561 women and 33,388 men.
Ranking of variables by explanatory value:
Male model: Time between couple formation and first child / parent status of spouse / age education / nationality / region of domicile / year of birth of first child / sibship size / spouse's socio-economic category / marital status at time of birth / father's socio-economic category / respondent's social group
Female model: Age education / time between couple formation and first child / region of domicile / nationality / parent status of spouse / year of birth of first child / sibship size / spouse's socio-economic category / father's socio-economic category / marital status at time of birth
Source: EHF 99 survey

Reproduction of the one-child pattern
The reproduction of the one-child pattern is significant among men and women, but the correlation is higher in the female model (OR=1.2 or 1.4). Conversely, the larger one's own sibship size, the lower the probability of having only one child (OR=0.7 or 0.8). In the long term, the increase in the number of one-child families may well contribute to spreading this pattern. This may be seen as an illustration of the low fertility trap (Lutz, 2005).

Couples family-oriented from the outset
The characteristics of one's spouse and the status of the union at the birth of the first child significantly affect the probability of having only one child. The most discriminating factor is the fact that the child born is not the first for one of the spouses, which correlates with the highest risk of only having one child. The effect is stronger where it is the respondent's female partner who has already had a child (OR=3.3 compared with 2.3 in the female model), which confirms our hypothesis (see above).

Couples unmarried at the time of the first birth more often adopt the one-child pattern (OR=1.3). This difference persists among stable couples, perhaps because these are less "conservative" individuals or less oriented towards a family pattern. Couples who had their first child early are extremely unlikely to have only one (OR=0.5 or 0.6). These are probably couples more oriented towards family values, for whom having more than one child is the obvious thing to do. However, a longer delay may also be the consequence of difficulties in conceiving or a feeling of economic insecurity, which predisposes people to not have any more children. These dimensions cannot unfortunately be controlled for with the EHF data.

ERFI SURVEY

The ERFI survey can be used to test the effect of further variables relating to the *couple* (such as the age gap between spouses or the rank of the union) and *socialisation during childhood* (whether spent with both parents), and not least to take account of *indicators of values and opinions*: attitude to religion, views on male-female relations and women going out to work. The "region" variable is not included in this regression because of the non-representative nature of the survey at regional level. The low numbers involved[24], particularly among men, explain why so few variables are used in the models presented in Table 4. It is also because of too few respondents in certain categories that the model focuses on French nationals and those whose spouse had no child from a previous union The most significant variables are not identical for both sexes and are more numerous among women.

The positive effect of higher age at first birth for those with least and intermediate qualifications is confirmed, particularly for women, and, as before, this higher age effect does not show among the most highly qualified. The model particularly reveals the specific nature of managerial women, who are extremely likely to have only one child (OR=3.9).

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[24] These low numbers also explain some high collinearity among variables. For example, no regular attender at religious services has only one child, no child of a farmer spent their childhood without one of their parents, and no foreign-born person has a "managerial or intellectual professional" father. There are no combinations of rare modalities.

Table 4. Probability of stopping at one child – semi-log model
Men and women of French nationality who had their first child between 1980 and 1995 before the age of 35 (women) in a union that lasted at least ten years after the first birth.

		Women		Men	
		OR	**p**	**OR**	**p**
Education and age	No or few qualifications and first child relatively early	0.4	*	1.2	-
	No or few qualifications and first child relatively late	2.2	**	1.6	-
	Intermediate qualifications and first child relatively early	*ref*		*ref*	
	Intermediate qualifications and first child relatively late	3.0	***	2.0	*
	Higher qualifications and first child relatively early	0.8	-	0.3	*
	Higher qualifications and first child relatively late	0.8	-	0.9	-
Respondent's social group	Farmer, craftsperson, shopkeeper	1.4	-		
	Higher-level occupation	3.9	***		
	Intermediate occupation	1.4	-		
	Manual worker	1.7	-		
	Clerical and sales worker	*ref*			
	Other (inactive and other?)	0.8	-		
Union order	*1st birth in first union*	*ref*		*ref*	
	1st birth in second union	0.3	**	2.0	**
Age difference between spouses	Man younger than woman	2.3	***		
	Man and women same age		*ref*		
	Woman younger	1.3	-		
Religious practice	Practising	0.4	***	0.5	*
	Non-practising	*ref*			
	No religious affiliation	1.2	-	1.7	-
Attitude	*Traditional*	*ref*		*ref*	
	Not traditional	0.5	**	0.6	*
Childhood family history	*Spent most of childhood with parents*	*ref*			
	Spent most of childhood without parents	2.0	**		
Duration of union at 1st birth	0 - 2 years			0.5	** *
	3 and more years			*ref*	

Significance levels, ***: p < 0.01; **: p between 0.01 and 0.05; *: p between 0.05 and 0.1.
Female model: -2 Log L = 528.4 / % concordant pairs = 71%
Male model: -2 Log L = 366.7 / % concordant pairs = 66.8%
Population of reference: Men and women who had a first child between 1980 and 1995 within a union that lasted at least ten years after the first birth, where the respondent is a French national and the child is the first for both parents. Numbers are 721 for the female model and 489 for the male model.
Ranking of variables by explanatory value:
Male model: Time between formation of couple and first child / rank of union / age education / traditional values
Female model: Age education / religion / Age difference between spouses / traditional values / social group / rank of union / having spent or not spent childhood with parents.
Other model variables: Birth cohort / opinion on male-female relations / marital status at time of first birth / sibship size.
Source: ERFI 2005 survey

With respect to the characteristics of the couple, the age gap is only significant in the female model, and contradicts what was expected: women whose spouse is younger more often have only one child. This result does not confirm the hypothesis concerning the positive effect of egalitarian gender relations on the birth of a second child (Olah, 2003). The rank of the union is significant in both models but with a different sign for men and women: having had a previous union before the first birth reduces women's likelihood of stopping at one child, and increases men's. One explanation may be the inverse correlation between fertility and the breakdown of the previous union: for women, the breakdown of an infertile union to start a family with a new partner; for men, an infertile first union demonstrating rather a less positive attitude to family values. These hypotheses obviously need to be tested in further research.

Spending most of one's childhood without two parents is often a discriminating factor in family behaviour, particularly the formation and breakdown of unions. The same is true for only children, but only in the female model (OR=2). The reasons for a childhood spent with only one parent may vary: death of one parent, total absence or breakdown of the union. The numbers in the ERFI survey are not sufficient to distinguish between these cases.

Another justification for using this survey is to be able to consider variables relating to values. Religion is an undeniable vector of values. The results show that religious practice, even occasional, correlates with a lower probability of having only one child (OR=0.4/0.5). Religion, however, covers fairly different forms of practice depending on faith and sex (Régnier-Loilier and Prioux, 2008), which makes it rather more difficult to interpret these results more closely. The small number of occasional and regular attenders is another difficulty.

Among the other constructed variables of opinions and values, the only significant one is that relating to a traditional concept of the family and relationships within the couple. Contrary to our hypotheses, the least traditional men and women are least likely to adopt the one-child pattern (OR=0.5 or 0.6), and views on women going out to work have no significant influence. The one-child pattern apparently corresponds to a more conservative and traditional concept of relationships within the couple and the family.

5. Conclusion

European countries' gradual adoption of a low fertility pattern shows itself both in an increase in childlessness and in an increase in the one-child pattern. We have demonstrated the contrast between the general increase in childlessness and the great diversity in the extent and development of the one-child pattern, even within countries that are culturally close. In Germany and England & Wales, childlessness is advancing ahead of the one-child pattern, whereas in Southern European countries the two are rising together. France lies in a stable intermediate position with relative low childlessness and a fairly high proportion of women who only have one child. This relative stability is remarkable, given the expected effects of two major family demographic trends that have a positive effect on the likelihood of having only one child: increasing age at the time of the first birth and a higher number of breakdowns among couples with one child. Excluding the effects of these two phenomena, the proportion of men and women in France who "choose" to have only one child has apparently fallen. The men and women who make this choice, whether constrained or not, present specific profiles. Our research reveals two groups: one more "family"-oriented, who become parents soon after forming a couple. Others, probably less "family"-oriented, wait longer before having their first child, and ultimately do not go on to a second. The trade-off between a woman's work and a bigger family is in these cases a predominant factor in the decision to have a second child. A clear distinction can be seen among women between high educational qualifications,

correlating with a fairly low probability of having only one child, and high social status (manager and intermediate profession) correlating more with the one-child pattern. The various regressions also show the importance of the dimensions of "socialisation during childhood" and "culture". The one-child pattern appears to be transmitted from one generation to the next, and the effects of religion, nationality and social origin are highly important.

As often with this type of study, it would be instructive to be able to examine couples more closely, which is only possible if symmetrical information on the spouse is available. Where both parents were themselves only children, does this enhance the effect? In addition, some factors could not be considered, such as the effect of the difficulty some couples have in conceiving. It would be possible to examine this by applying to couples who had their first child in a given year the probability of having no children in the following ten years, allowing for the woman's age at the birth of the first child, as Toulemon did in examining couples' choice not to have children (Toulemon, 1996). Having no more children is less important than complete childlessness, once one controls for the age at first child effect, as we have done by restricting the reference population to those who had their first child before the age of 35.

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