Social Differences in Sex Preferences for Children in France

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Paper abstract and poster for 2007 PAA Poster session P3

I. Introduction

Research on family preferences and behaviors in developed countries focuses more and more on gender preferences for children, while there is already a large literature on such behaviors in developing countries (Cleland, Verrall, Vaessen 1983; Arnold 1997). These preferences are related to the comparative value of men and women in the society, according to parents-to-be. In low fertility societies, gender preferences may increase the overall level of fertility, if couples are going on having children until they are satisfied. On the other hand, sex selective abortion may reduce fertility.

II. Background

In France as in many countries, there is a marked preference for having at least one boy and one girl. This can be seen when looking at the propensity of couples with two children or more to have an other one, depending on the sex of the children ever born. The main contrast concerns couples with two children, who more often have a third one if they have two children of the same sex, and less often if they have one boy and one girl. A second-order differences nevertheless appears, which shows that parents with one girl more often have a second child than parents with one boy, and that parents with two girls more often have a third child than parents with two boys (Desplanques 1985). The differences are very small but statistically significant and stable over time. Recent attempts to evaluate such preferences in Europe from the Fertility and Family Surveys (Hank, Kohler 2000) did not lead to many stable and significant results, because of the small sample size of the samples, related to the small magnitude of the effects.

Fertility is stable around 2.1 children per woman in France, and we will check whether these preferences are stable in France, like they are in the Nordic countries (Andersson, Hank, Ronsen, Vikat 2006), or if they are diminishing like in the US (Pollard, Morgan 2002). General opinion surveys including questions about the possibility to choose the sex of children show negative attitudes towards the possibility to choose the sex of the children. In 2001, there was a change in the law on abortion, moving the maximum duration when the abortion is allowed from 10 to 12 weeks of pregnancy. This raised the question of sex-selective abortion. These sex-selective abortions are not formally illegal in France, but there is a strong reluctance of medical practitioners to tell the sex of the embryo before the end of the period when abortion is allowed. There was an official consensus on that point. The new law on abortion abandoned the idea that the woman had to prove being in a "situation of distress", but there was an agreement about the fact that the sex of the embryo may not be considered as a "legitimate" reason to get an abortion.

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III. Methods

We will first check from civil registration data that the sex ratio at birth remains constant in several groups that can be identified from the civil registration data: region of residence, age and marital situation of the mother.

Using the one percent retrospective survey on Family history which took place in 1999, we will also check that there is no sex selective abortion, by checking whether the composition of siblings by sex is compatible with the hypothesis of independence: on the one hand the eventual propensity of some couples to have many children of the same sex is very minor or non existent. On the other hand we may assume that if there were some sex selective abortions, the sex of the newborns would be negatively correlated with the sex of the older children.

Second, we will identify behaviors proving that the parents are not indifferent to the sex composition of their offspring. Parity progression ratios depending on the sex of the previous children allow to identify specific "stopping rules". We will check whether the preferences have changed since the 1970s, replicating Desplanques' analysis on parity progression ratios. We will also look at some other behaviors of couples, such as marriage (more than half the first-born are born outside of marriage), union disruption and divorce, which may vary not only with the number of children but also with the number of boys and girls (Morgan, Lye, Condran 1988; Andersson, Woldemicael 2001, Diekmann, Schmidheiny 2004).

The commitment of men in fatherhood may also be estimated in two ways. First, official recognition of children is not compulsory in France, and some 6% of children are not officially recognized by their father during the year of their birth, a proportion which remains stable since the 1960s (Beaumel, Kerjosse, Toulemon 1999). Data on official recognitions, recently made available at the individual level, will allow us to check whether recognition is depending on the sex of the newborn. Second, the survey we use was conducted on men as well as on women, and some 5% of children are "missing" in the males' records, when we compare the figures with females' ones, and take into account recognitions after the first year of the child, differential migration and mortality (Mazuy, Toulemon 2001). Some men may not have described all their children, especially the men who have broken their union with the mother, and who have other children in a new union (Toulemon, Knudsen 2006). We will compare men and women's answers on the sex composition of their offspring at the global level. As women's answers are likely accurate, because women most often live with their children, after a union disruption, this will gives us information on under-reporting of their children by men, depending on the sex structure of their children.

These analysis will be differentiated by social group, as preliminary results have shown large differences in progression to the third birth. The preference for the sons was less pronounced among the most educated groups in the 1970s (Desplanques 1985). Similar differences have recently been found for Sweden (Andersson, Hank, Vikat 2006).

Simple simulations models will be used to transform the results into an estimate of couples with specific expectations regarding the sex composition of their offspring.

IV. Data

Civil registration data are exhaustive in France, and some 750,000 children are born each year. The French statistical institute, (*Institut national de la statistique et des études économiques*, INSEE) publishes a yearly document on main results on the population trends (Beaumel, Daguet, Richet-Mastain, Vatan 2006). The INSEE has recently made available individual microdata on births and recognitions since 1990, including the sex of the newborn

and much information about the parents. Unfortunately, nothing is known about the sex composition of the kinship. This dataset will then be useful to describe the trends in the sex ratio at birth.

We will use an other data set, coming from a one percent survey conducted by the INED and the INSEE, on fertility and family histories of men and women. This large-scale survey includes information on 235,000 women and 145,000 men aged 18 and over in 1999. Respondents were asked to fill in, in addition to the census documents, a 4-pages form on their children, stepchildren, first and last unions (Lefèvre, Filhon 2005). This survey is described in English in (Cassan, Héran, Toulemon 2000). The data file also includes many socio-economic variables coming from the census forms. It is available for comparative research (see http://www-ehf.ined.fr).

V. Results

We did not perform the analyses yet, but only some validation on the data. Preliminary analyses have shown that the sex ratio at birth is constant since the 1970, giving no indication of sex-selective abortions in France.

The progression to the third child is still higher in the 1990s for parents with two girls than for parents with two boys, but this is not true for all social groups: high level white collars seem to exhibit a preference for girls.

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The poster is reproduced below]

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1. Data: a One-percent survey held in the context of the 1999 General population census

Data are available for research: see details at www-ehf.ined.fr

Sample size

Data are available on 235,000 women and 145,000 men aged 18+, and 690,000 children. All results presented here come from women's answers.

2. The distribution of families by sex of siblings is not random, because some couples want at least one child of each sex

Method

We identify discrepancies in the distribution of siblings by sex of the children, compared with a random distribution deduced from the sex ratio at birth.

Results

a. The sex ratio at birth of children is constant with time at 105.3 boys for 100 girls (51.3% of children are boys)

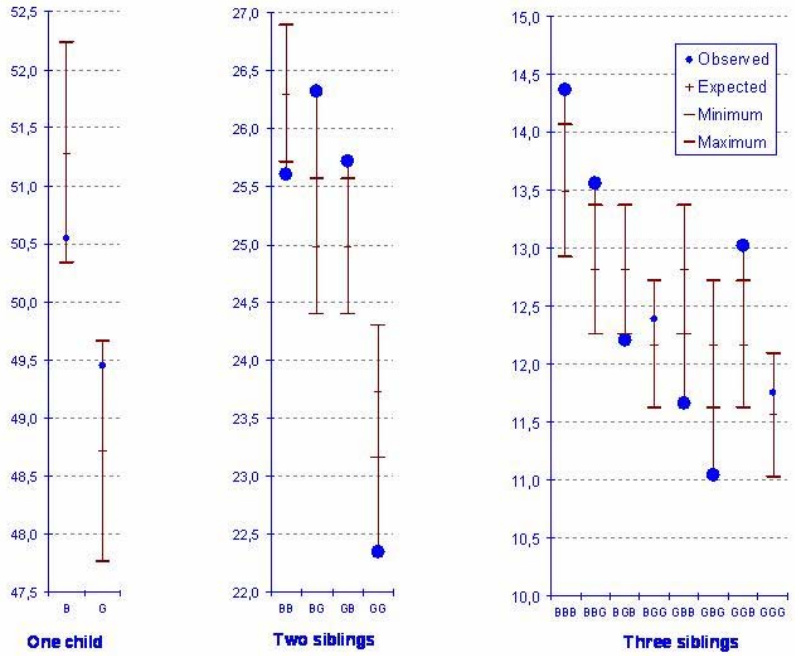
b. When family size is fixed, the distribution by sex is not random:
   - Single children are more often girls (small difference with respect to random distribution)
   - Two-child families often comprise one boy and one girl (significant differences)
   - Among three-child families, the two first children are often of the same sex

c. No evidence of sex-specific abortions

d. On the contrary, some evidence of a very small positive correlation between the sex of two successive children (r =0.007 without twins, p <0.0001)

e. The sex composition of siblings is mainly the consequence of parity progression ratios determined by the sex of children already born

Figure 1. Distribution of siblings by sex, according to number of children (per cent)



Taking account of sex ratio at birth, for each family size, the distribution of families by sex of children is estimated, with confidence intervals, and compared with the observed distribution.

3. Additional children due to gender preferences are mainly third children

Method

Comparing parity progression ratios (PPRs) by sex composition of siblings in order to estimate the proportion of couples who have another child because they want at least one child of each sex

Results

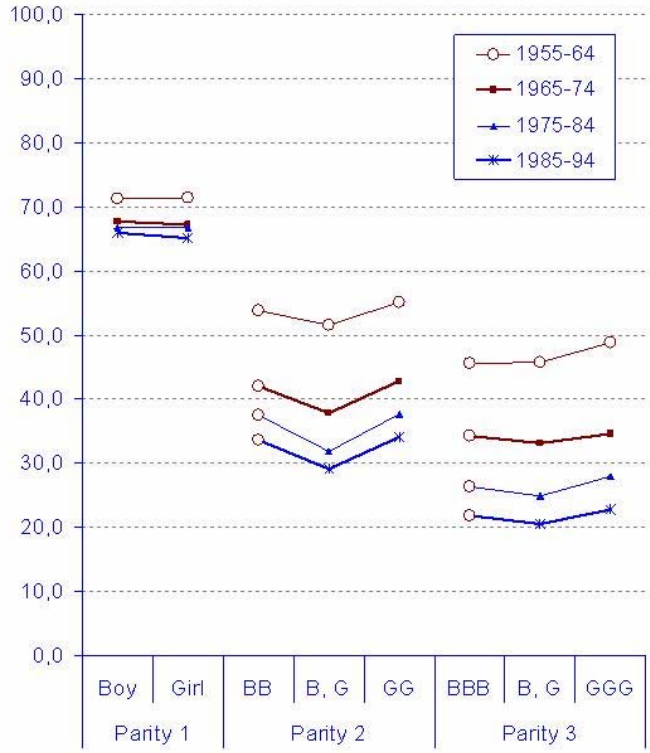
a. Progression from 1 child to 2 is more common after one boy (small difference)

b. Progression from 2 to 3 is more frequent when both children are of the same sex, with no significant differences between women with two boys (BB) and two girls (GG)

c. At higher parities, the PPRs are not statistically different, except for parents with girls only, who more often have another child

d. From one period to the next, it seems that the difference between PPRs associated with BB or GG, compared with BG, is increasing, but this could be due to the decline in the PPRs.

Figure 2. Parity progression ratio in the five years following a birth (per cent) by number and sex of previous children. Children born in 1955-94



4. Is gender preference increasing with time? Modeling the proportion of couples who want at least one child of each sex

Method

Estimate the proportion of couples who want children of both sexes, from the PPRs a_2

- Method A (odds ratio): $A=(a_2|BB)*(1-a_2|BG)/(1-a_2|BB)/(a_2|BG)$
- Method B (difference): $B=(a_2|BB) - (a_2|BG)$
- Method C (simulation): $C=[(a_2|BB) - (a_2|BG)] / (1-a_2|BG)$

Results

a. Method C involves estimating the proportion of couples who wish to have a third child (PPR=1) in order to have one girl if they have BB, or one boy if they have GG, assuming that their PPR is the same as other couples if they have one boy and one girl (BG)

b. According to this estimate, the wish to have a boy has increased very little, while the wish to have a girl is now equally frequent

Figure 3. Proportion of couples who have a third child because of the sex composition of their first two children

		Year of birth of the last child			
		1955-64	1965-74	1975-84	1985-94
Method A	**BB**	**1,09**	**1,19**	**1,28**	**1,24**
(odds ratio)	**GG**	**1,15**	**1,24**	**1,29**	**1,26**
Reference	BG	1,00	1,00	1,00	1,00
Method B	**BB**	**2,23**	**4,15**	**5,63**	**4,64**
(difference)	**GG**	**3,53**	**5,09**	**5,83**	**5,00**
Reference	BG	0,00	0,00	0,00	0,00
Method C	**BB**	**4,61**	**6,67**	**8,26**	**6,54**
(simulation)	**GG**	**7,86**	**8,91**	**9,35**	**7,58**
Reference	BG	0,00	0,00	0,00	0,00

5. Farmers and the self-employed prefer boys, white-collar workers prefer girls

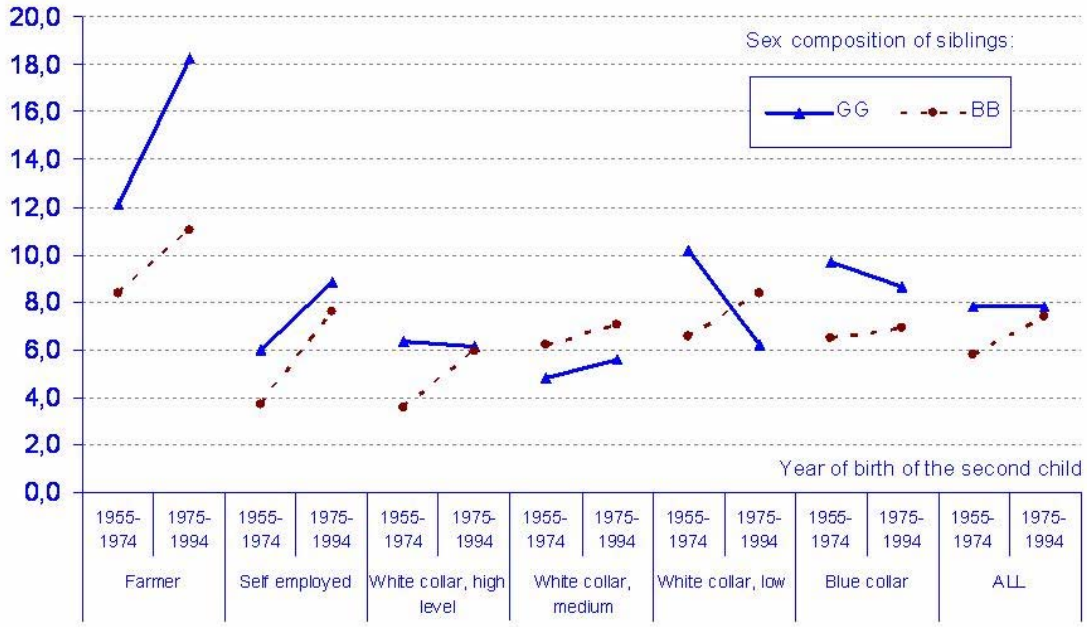
Method

Estimating gender preference for each social group (father's occupation) and for two periods of time (during and after the baby boom)

Results

a. In all social groups, there is a preference for at least one child of each sex: it is as if 8% of couples with two children were having a third child because they want to have at least one child of each sex
b. The wish to have a girl is increasing in all social groups
c. The wish to have a girl is now as common as the wish to have a boy
d. Farmers and self-employed men prefer boys, white-collar workers prefer girls
e. Among blue-collar workers, the dramatic decline in fertility after the baby boom is associated with a less frequent wish to have at least one boy, but this is not indicated by the odds ratios, which are increasing with time among this group.

Figure 4. Percentage of couples having a third child because they want at least one child of each sex. (Estimates from method C presented in part 4 above)



Main results

• Gender preferences for siblings still influence French fertility behavior. Their main consequence is to encourage some couples to have a third child if their two first children are of the same sex (two boys or two girls), while no evidence of sex-selective abortion can be shown.

• Due to the decline in the progression to the third child, the odds ratios usually computed may misleadingly show an increase in gender preferences for children. We propose a new method based on an explicit estimate of the proportion of couples who want at least one child of each sex.

• A simulation method estimating the proportion of couples having a third child because of the sex of the first two children shows that the wish to have one boy has remained stable since the 1960s, while the wish to have a girl has reached a similar level to the wish to have a boy.

• Large differences still exist bet-ween social groups: farmers and the self-employed still more often want a boy than a girl; the same is true for blue-collar workers, though the difference is decreasing.
Among white-collar workers, the wish to have a girl is now more frequent than to have a boy.