Sociability and fertility : two expressions of an underlying orientation towards social cohesion ?
Results from a longitudinal survey on fertility intentions, France, 1998-2003

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The link between sociability and fertility: literature review

A growing demographic literature focuses on the determinants of below-replacement fertility levels, as very low fertility seems to have become a lasting trend in many Western countries (Lesthaeghe et Willems 1999, Bongaarts 2002, Kohler et al. 2002). Four factors seem to contribute to relatively high fertility levels in these contexts: access to resources and economic stability (Kohler et Kohler, 2002, Diprete et al., 2003), more equal gender relations - at least when measured at the level of countries - (McDonald, 2000, Pinelli et al., 2003), family policy efforts (McDonald, 2002, Rindfuss et al., 2003), and having familialistic values, or rather, resisting to post-modern values (Lesthaeghe et Meekers, 1986, van de Kaa, 1987, Jansen et Kalmijn, 2002).

In the last explanatory perspective, the set of family changes characteristic of the "second demographic transition" (rising cohabitation and divorce, delayed marriage and fertility) are related to two fundamental evolutions of Western societies: the rise of individualism (that is, the move towards capitalism), and an increasing demand for negotiated authority (that is, the move towards democracy) (Godelier, 2004). These broad scale social transformations were born from the industrial revolution . They revolutionized the material basis of our society as well as individuals' value systems, and had a strong impact on family formation behaviours: the entry into the modern era produced the first demographic transition. This "process of civilization" (Elias, 1991) caught speed after the second world war with the advent of consumers' society: an even greater emphasis is placed in contemporary "post-modern" societies on individual autonomy and self-determination, nd even moe changes occurred in the family.

Both parents want today to have a fulfilling professional and social life, and as they seek to combine parenthood with extra-familial accomplishments, they delay marriage and births (Sauvain-Dugerdil, 2005). At the same time, traditional institutions such as male domination, parental authority, or marriage, have lost part of their legitimacy. Today, parents negotiate their decisions with their children, and both sexes are equally responsible for their children (de Singly, 2004). Couples prefer re-negotiable forms of unions like cohabitation, and re-negotiate their unions often: divorces are frequent and marital histories become more complex (de Singly, 2000). Very low fertility can be seen as the additive result of all these different changes, as marital trajectories start later and are marked by stops and new starts with different partners, as couples have their first child later due to career investments, as both men and women want to combine family life and work, and as each child is the recipient of greater attention and more investments.

Surkyn (2003) proposes a new concept to think about the relation between rising individualism and contemporary family changes: the concept of "social cohesion." For him, a rise in individualistic values can alternatively be read as a disinvestments from values supporting social cohesion. He suggests that the creation of family relations (unions, births) are expressions among others of an underlying disposition to integrate, build, and maintain social elations (communities). To him, valuing social cohesion means feeling part of a (or several) communities (the identification

dimension of social cohesion), as well as taking concrete actions to integrate these communities (participation, exchange, contacts). Measures of the extent and nature of individuals' social networks and their frequency of exchange with others are thus indicators among others of the importance these individuals grant to social cohesion. Using individual-level data from the 1999 « European Values Surveys », this author shows that an orientation towards social cohesion (measured with 66 questions on 1) attitudes towards politics, institutions, civil morality, time spent with friends, 2) feelings of belonging to varied groups, and 3) actual participation to religious and community life) is positively linked in Europe to being married and having children. He concludes: « Parents (generally married ones) contribute most to social cohesion, by nurturing strong roots in local community and by having children » (p. 32). Individuals who remain without children or are divorced seem to develop fewer and more universal forms of social commitments.

Buehler and Fratczak (2004) adopt an economic approach to the link between sociability and fertility: for these authors, social networks are resources; strong support networks, by diminishing the costs of childrearing, help couples have large families. These authors find indeed a positive relationship between the size of individuals' support networks (measured as the number of reciprocal support relationships) and their intentions to have a second child in Poland. Their result is especially strong when relationships with the family of origin alone are considered, but remains true for relations with colleagues and friends.

We can address two preliminary methodological critiques to these studies. Surkyn (2003) understands the relationship between participation to social life and fertility as an artefact: to him, both behaviours result from a single common underlying factor, a value orientation towards social cohesion. He does not consider the existence of a *reverse causation* between fertility and sociability: after all, the birth of a child may change the intensity and forms of social commitments because of changes in time constraints and interests. A transversal measure of the relation between social participation and fertility cannot distinguish between the hypothesized mechanism of *selection,* and a possible process of *adaptation* (Lesthaeghe, 2002).

To avoid this problem, Buehler and Fratczak (2004) decided to examine the link between social networks and fertility *intentions* rather the link between social networks and fertility. Fertility intentions are however relatively poor predictors of fertility at the individual level. For example, in our data, only 58.4% of the respondents interviewed in 1998 were able to predict correctly their fertility behaviours in the next 5 years (22.7% did not make a prediction in 1998 ("not sure"); 18.9% planned their future incorrectly, and among these, 16.2% thought they would have a child but failed to have one, and another 2.9% thought they would not have a child but had one). A number of these discrepancies are obviously due to sub-fertility or sterility, others to contraceptive failures (occurrence of unintended pregnancies). Other inadequacies result from a modification in the intention itself, related to individuals' relational history (a break-up or the partner's low "quality") (Zabin et al., 2000), discrepancies with the partner's own intentions (Williams, 1992, Thomson, 1997, Bankole, 1995),

competition of fertility intentions with individual interets (Bongaarts, 2001), psychological factors such as anxiety or evasion (Micheli et Bernardi, 2003), women's work and availability of childcare (Livi Bacci, 2001), and changes in economic status (Symeonidou, 2000).

The data of the *Intentions de fécondité* survey allows us to avoid both of these methodological traps. Our longitudinal data contain indications on individuals' participation to varied areas of social life in 1998, as well as fertility and fertility intentions as measured in 1998, 2001 and 2003. We are able to examine the link between sociability and fertility while controlling for the direction of causality (avoiding reverse causation), without having to rely on intentions as an indicator of actual fertility.
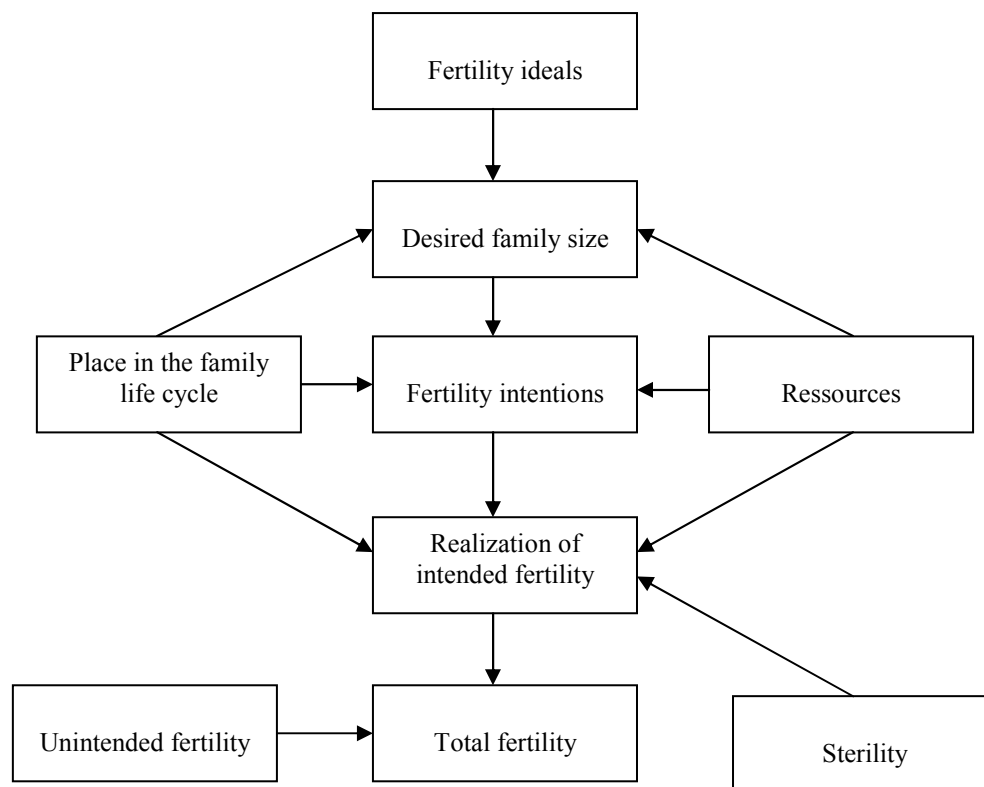
Conceptual framework and hypotheses

Based on existing results, we expect respondents engaged more intensely in various areas of social life in 1998 (contacts with family, friends, colleagues and neighbours, participation to associations, religious practice, voting) to have more children in the five years following the survey. We hypothesize in particular that keeping strong relationships with the family of origin (and to a lesser degree, meeting frequently with friends and colleagues) in 1998 will be linked positively to respondent's number of children in the next five years. We also hypothesize that respondents engaging in local forms of social relations (such as having frequent contacts with neighbours) will be more likely to have children than those exhibiting more universal forms of social participation (such as voting).

We will use several indicators of sociability, and test their relations to different dimensions of the micro-level process leading to births. The dimensions of fertility considered are pictured in Figure 1: 1) fertility ideals (the number of children thought to be ideal for a family *in general*) 2) own desired family size 3) fertility intentions (that is, self-estimated probability to have a child in the next five years) 4) having one or more child between 1998 and 2003 when planning to do so in 1998 5) total fertility between 1998 and 2003.

Fertility *ideal*s (1) are in general higher than fertility *desires* (2), since desired fertility is a compromise between these ideals, the resources available at a given time, and what has been learned so far about being in a conjugal relationship and having children. *Planning* to have a child (3) at a given time depends on how many children the respondent wants altogether, on his / her position in the family life cycle, and on the couple's resources. Being able to *realize* these intentions (4) depends on the resources available at the time, and on having a stable conjugal relationship. By decomposing the independent variable, giving birth to children during the 5 years after the survey (5), into four dimensions (ideals, desires, planning, and realizations), we can test whether the relation between sociability and fertility is located at the level of values, or if a couple's relations contribute materially to the realization of their fertility plans.

Figure 1. Conceptual framework: from intentions to actual fertility

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                    ┌──────────────────┐
                    │  Fertility ideals │
                    └──────────────────┘
                             │
                             ▼
                    ┌──────────────────┐
          ┌────────▶│ Desired family size│◀────────┐
          │         └──────────────────┘           │
          │                  │                      │
┌──────────────────┐         ▼           ┌──────────────────┐
│ Place in the family│──────▶│Fertility  │◀──│    Ressources    │
│    life cycle     │       │intentions │   │                  │
└──────────────────┘        └──────────┘    └──────────────────┘
          │                  │                      │
          │                  ▼                      │
          │         ┌──────────────────┐            │
          └────────▶│  Realization of   │◀───────────┘
                    │ intended fertility│◀──────┐
                    └──────────────────┘        │
                             │                  │
                             ▼                  │
┌──────────────────┐ ┌──────────────────┐ ┌──────────────────┐
│Unintended fertility│▶│  Total fertility │ │     Sterility    │
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Data and methods

Intentions de fécondité is a longitudinal survey realized in three waves (1998, 2001 and 2003) by the Institut National d'Etudes Démographique (INED). The first wave was tagged on the *Enquête permanente sur les conditions de vie des ménages* conducted in September and October 1998 by the Institut National de la Statistique et des Etudes Economiques (INSEE). This face to face interview was conducted at the home of the respondent; 2776 men and women aged 15 to 45 years were interviewed, and the sample was representative of the population living in France at that time. Weights were constructed for each individual based on the 1998 sample.

The two following waves were postal follow-up surveys: 4 pages (2001) and 6 pages (2003) questionnaires were sent by INED to all respondents. Of the 2776 individuals interviewed in 1998, 781 completed the 2003 questionnaire. The attrition of the sample is important, and a study is underway to check whether this selection affects the relationships between the variables used in this study. Of the 781 respondents in 2003, 754 had completed themselves the 1998 survey; in 23 cases, one partner responded in 1998, and the other in 2003; in four cases, the 2003 survey was completed neither by the person who responded in 1998, nor by his / her partner: these four cases were eliminated from the present study; this analysis was conducted with 777 respondents.

An entire section of the 1998 questionnaire was devoted to the respondents' social life: their frequency of meetings with their mother and father (when not living with them) and with other members of the family, their frequency of meetings with friends, neighbours, their frequency of extra-professional contacts with colleagues, their participation to associations (number of associations, degree of responsibility taken, frequency of meetings), their religious practice, and their voting behaviors. Data on fertility ideals were collected in 1998 and 2001, data on desired family size were collected in all three waves, and fertility intentions in the next 5 years were collected in 1998 and 2001. Detailed fertility histories were collected in 2001 and 2003 about all children born since January 1998.

Table 1: Dependent, control, and independent variables: descriptive statistics

	N	Mean	S. Dev	Min.	Max.
Dependent variables					
Ideal family size in 1998	768	2.64	0.75	0	6.5
Desired family size in 1998	732	2.45	0.89	0	7.0
Plans a child in the next five years in 1998 (0 = no, not sure, 1 = yes)	777	0.33	0.46	0	1
Number of children born 1998-2003 to those who planned	257	0.62	0.53	0	3
Number of children born 1998-2003	777	0.26	0.68	0	3
Control variables					
Age in 1998	777	29.52	8.73	15	45
Sex (0=women, 1=men)	777	0.45	0.49	0	1
Cohabitation in 1998 (0= not cohabiting, 1 = cohabiting)	777	0.57	0.49	0	1
Number of children in 1998 (including pregnancy in 1998)	777	0.94	1.13	0	6
Years of schooling	632	12.6	3.24	0	26
Average monthly household income per member in 1998 (in euros)	764	1008.22	628.11	0	4763.72
Independent variables					
Annual frequency of meetings with parents and other family members	622	148.17	186.52	0	782
Annual frequency of meetings with friends	777	143.98	161.42	0	1095
Annual frequency of meetings with neighbours	777	102.45	168.76	0	1460
Indicator of frequency of contacts with colleagues outside of work	519	1.70	1.13	0	4
Indicator of participation to associations	777	5.79	8.68	0	70
Indicator of religious practice	777	1.99	0.91	1	4
Indicator of political participation (voting)	719	2.17	1.12	0	3

Source: *Intentions de Fécondité*, 1998-2003, Institut National d'Etudes Démographiques ; weighted results.

We conducted our analysis in four stages. In a *first stage*, we constructed five dependent variables: 1) ideal family size in 1998 (9 respondents who "did not know" were attributed a missing value); 2) desired family size in 1998 (18 respondents were sterile and did not plan to adopt or use medically assisted reproduction; 27 respondents "did not know": these 45 respondents were attributed a missing value); 3) perceived probability to have a child in the five next years in 1998 (1= "yes, for sure" or "yes, probably"; 0 = "no, for sure", "no, probably" or "not sure"); 4) number of children born between 1998 and 2003 for those who thought in 1998 they would have a child in the next five years; and 5) total number of children born between 1998 and 2003. Each of these five variables expresses a number of children. Since pregnant respondents were asked in 1998 about their

probability to have a child in the next five years "on top of the one underway", these pregnancies (if they ended in a live birth) were subtracted from the number of children born between 1998 and 2003, and added to the number of children had in 1998. Children born before September or October 1998 and after September or October 2003 were not considered. Table 1 shows some basic descriptive statistics for the dependent variables.

We constructed in a *second stage* seven indicators of social participation using 45 variables (of which 33 describe the respondents' participation to associations), imposing our own ordering on the data. The first dimension, frequency of encounters with the family of origin, was constructed with three numeric variables: frequency of encounters with the father, with the mother, and with other members of the family. Individuals who were still living with at least one of their parents or who had at least one parent deceased were attributed a missing value. To loose fewer respondents, and since the two first variables were highly correlated, we constructed this scale as an addition between the frequency of meetings with the rest of the family, and the maximum between the frequency of meetings with the mother or the father. The annual number of meetings with friends and the annual frequency of contacts with neighbours were built each with one variable. Frequency of extra-professionals contacts with colleagues was built as a numerical variable adding three ordinal variables (eats mostly at lunch with colleagues yes = 1 point / no = 0 point, invites colleagues at home frequently = 1 point / sometimes = 0.66 points / rarely = 0.33 points/ never = 0 points, is invited by colleagues at home, same). Respondents who did not work outside of home were attributed a missing value (29% of the sample). Given the great loss in sample size induced by the introduction of this indicator, every model in the rest of the analysis was also tested while removing this variable. The results remained generally identical whether this variable was introduced or not, although a bit less clear cut in the second case, so that we decided to include this variable in the final models despite the loss in sample size. Participation to community life was computed from 33 variables: for 11 types of associations (parents' association, owners / renters' association, professional association or syndicate, humanitarian association, religious group, cultural or musical association, sports' club, environmental association, alumni association, neighbourhood association, other associations), respondents were asked how many associations they belonged to, to what degree of responsibility (simple adherent=1, participant=2, leader=3), and at what frequency the meetings took place (in five categories, 1= once a year, 5= several times a week). The proportion of the sample involved in each specific type of associations being small (from 1.5% to 9.5%), we decided to compute a single numeric variable measuring associative participation, by first multiplying the number, the degree of responsibility and the frequency of meeting for each area of associative life, and then adding these 11 results. Religious practice was given by one categorical variable (1 = no practice, no religious feeling, 2 = no practice, but religious feeling, 3 = occasional practice, 4 = regular practice); the question specified: "besides going to weddings, funerals, and baptisms". Political participation was computed as the sum of three binary variables: being enrolled on electoral lists, voted at the last regional election, voted at the last

legislative election. Minors were attributed a missing value; respondents who said they were "foreigners" were kept in the sample since part of them still voted (double nationality). Table 1 shows some basic descriptive statistics for the independent variables.

We conducted for each aspects of fertility considered (ideals, desires, intentions, realization, total fertility) a series of linear regressions, introducing stepwise each of the seven dimensions of social participation in the model. The results showed a great co-linearity between these seven dimensions of social participation; which variables were absorbed by others varied in different models in a non-interpretable way. We decided therefore to conduct a principal component analysis on the variables indicating social participation, so as to work with a reduced and meaningful set of factors. We first conducted a principal component analysis on the 45 original variables measuring respondents' social life; we tested another PCA with the 33 "participation to associations" variables already reduced into 11 variables plus the other 12 variables. These two analyses did not yield a small number of interpretable factors. We finally performed a principal component analysis introducing the seven pre-constructed indicators of social participation. The results were interesting, but the religious participation variable constituted a component in itself, and somewhat blurred the signification of the other components. We therefore decided to exclude religious participation from our definition of sociability, and to treat it as a control variable; our final PCA yielded three factors

We constructed in a *third stage* six control variables, all measured in 1998: age, sex, number of children (including the children of which the respondents were pregnant at the 1998 survey), marital status (cohabitation or not), educational level (number of years in school; 145 individuals still in school were attributed a missing value), and income (average monthly household income divided by the number of people living in the household; 13 respondents refused to respond to this question and were attributed a missing value). Table 1 shows some basic descriptive statistics for the control variables.

We introduced the control variables stepwise into five linear regression models (one for each dependent variable); we performed the same analysis on three populations (respondents with 0 children, respondents with 1 child, and respondents with 2 children or more) excluding the number of children from the control variables. Control variables (except sex and marital status) were tested in linear and categorical versions, to capture non linear relationships as well as linear ones. In a *final stage*, we introduced the individuals' factorial scores on three dimensions of sociability stepwise into our five regression models, while including the control variables as well.

Results

Modelling respondents' sociability

Before examining the link between respondents' sociability and fertility patterns, we had to reduce the variability of respondents' patterns of social participation into a few meaningful underlying factors. A principal component analysis on the six variables indicating respondents' intensity of

participation to six types of communities (neighbours, family of origin, friends, colleagues, associations, and nations) showed (Table 2) that three dimensions summarize satisfactorily respondents' social participation patterns. Three components have an eigenvalue superior to 1, and they account for about 60% of the total variance.

Table 2: Principal component analysis on sociability patterns: Eigenvalues

Component	Eigenvalue	Difference	Proportion	Cumulative
1	1.3170	0.1232	0.220	0.220
2	1.1938	0.1160	0.199	0.419
3	1.0778	0.1107	0.180	0.598
4	0.9671	0.1506	0.161	0.759
5	0.8165	0.1886	0.136	0.895
6	0.6279		0.105	1.000

Source: *Intentions de Fécondité*, 1998-2003, Institut National d'Etudes Démographiques ; weighted results. Input variables: annual frequency of meetings with parents and other family members, annual frequency of meetings with friends, annual frequency of meetings with neighbors, indicator of frequency of contacts with colleagues outside of work, indicator of participation to associations, indicator of voting behaviors. N= 460.

The table of eigenvectors (Table 3) reveals that the first eigenvector has large loadings on the three variables indicating respondents' frequency of contacts with friends, with the family, and with colleagues; this eigenvector has no negative loading. The second eigenvector has large loadings on political participation (propensity to vote), and to a lesser degree, on the variables indicating the respondents' involvement in associative life and their contacts with colleagues outside of work. It has negative loadings on the frequency of contacts with neighbours, and to a lesser degree on frequency of contacts with friends. The third eigenvector has strong loadings on contacts with the family and propensity to vote, and negative loadings on participation to association and frequency of contacts with friends. These results are pictured in Figure 2.

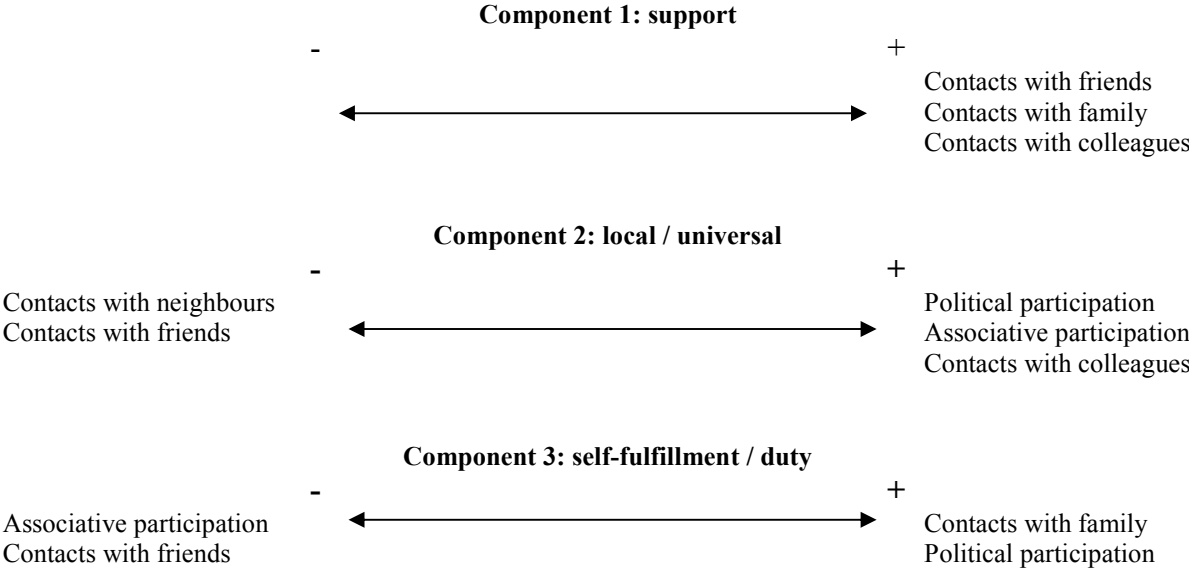**Table 3: Principal component analysis on sociability patterns: Eigenvectors**

Input variables	Component 1	Component 2	Component 3
Annual frequency of meetings with family	0.5302	-0.1193	0.5058
Annual frequency of meetings with friends	0.5796	-0.3581	-0.3690
Annual frequency of meetings with neighbours	0.1911	-0.5561	0.1210
Indicator of contacts with colleagues	0.1938	0.4020	-0.5079
Indicator of participation to associations	0.2518	0.5211	0.5323
Indicator of political participation (voting)	0.4953	0.3392	-0.2288

Source: *Intentions de Fécondité*, 1998-2003, Institut National d'Etudes Démographiques. Weighted results, n = 460.

The first component can be interpreted as the *supportive*, relational dimension of social life: all forms of community participation involve contacts with others and are somewhat supportive in that sense, but communities nurturing mutual exchange of affection or team spirit (family, groups of friends, colleagues) generate particularly supportive relationships. In their study, Buehler and Fratczak (2004) reduce in fact sociability to this (primary) dimension, and find a positive relationship between the size of these three support groups, and especially the existence of supportive relationship in the family, and fertility intentions. The second component contrasts respondents' sociability on the

universal versus *local* nature of their commitments: involvements in local communities (neighbours, friends) are distinguished from involvement in more universal communities (nation, associations). Surkyn (2003) also finds a distinction between local and universal forms of social commitment, local forms being associated to greater fertility and marriage in his study. The third component can be interpreted as differentiating involvements based on *duty* (relationships with the family, voting) and commitments taken for one's *own fulfilment* (relations with friends, associative life).

Figure 2: Three factors summarize the variability of respondents' patterns of sociability

Component 1: support

-   +

Contacts with friends
Contacts with family
Contacts with colleagues

Component 2: local / universal

-   +

Contacts with neighbours   Political participation
Contacts with friends   Associative participation
                                         Contacts with colleagues

Component 3: self-fulfillment / duty

-   +

Associative participation   Contacts with family
Contacts with friends   Political participation

Place in the life cycle, resources and fertility outcomes

We then examined the effect of socio-demographic (control) variables on fertility ideals, intentions and realizations (Table 4). We see that ideal family size (column 1) and desired family size (column 2) vary according to two parameters. *Experience* tends to lower both ideal and desired family size. Indeed, we observe that respondents aged 25 to 34 have a lower ideal or desired family size than respondents aged 15 to 24, and that this trend is even stronger for people aged 35 to 45. Actually, this result is true only for respondents who have 0 or 1 child (results not shown), that is for people who advance in age without having progressed much towards achieving their desired family size. Also, ideal family size seems to be (temporarily) lower when people have one child (although this result is not significative), when they took a first concrete step towards family formation. start realising how much work is involved in taking care of a child. Desired family size is also lower when people are cohabiting, when they took a first concrete step towards family formation. Of course, the actual number of children is also positively related to fertility ideals, but this relationship is to be read as the effect of ideals on achieving fertility.

Table 4: Linear regression models of fertility ideals, intentions and behaviours: socio-demographic predicators

	Ideal number of children 1998			Desired number of children 1998			Planning to have a child in the next 5 years 1998			Number of children, when planning 1998-2003			Total number of children 1998-2003		
	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur
Intercept	0	2.96	<.0001	0	2.480	<.0001	0	0472	<.0001	0	0.191	0.245	0	0.191	<.023
Age															
15-24	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
25-34	-0.123	-0.188	0.106	-0.126	-0.230	0.089	0.126	0.122	0.052	-0.036	-0.055	0.726	0.102	0.116	0.147
35-45	-0.205	-0.315	0.011	-0.236	-0.435	0.003	-0.219	-0.213	0.001	-0.124	-0.243	0.201	-0.182	-0.208	0.014
Sex															
women	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
men	-0.032	-0.049	0.421	-0.046	-0.084	0.248	-0.010	-0.009	0.5776	-0.009	-0.012	0.895	-0.061	-0.069	0.099
Cohabitation															
no	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
yes	0.008	0.014	0.861	-0.075	-0.156	0.099	0.173	0.189	<.0001	0.300	0.463	0.0001	0.234	0.301	<.0001
Number of children															
0 child	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
1 child	-0.057	-0.110	0.245	0.039	0.088	0.429	-0.113	-0.138	0.007	-0.091	-0.148	0.226	-0.078	-0.111	0.087
2 or more children	0.149	0.229	0.008	0.417	0.765	<.0001	-0.388	-0.377	<.0001	-0.075	-0.136	0.120	-0.246	-0.281	<.0001
Years of schooling															
10 years or less	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
11 or 12 years	-0.018	-0.031	0.713	0.064	0.133	0.172	0.046	0.050	0.262	0.133	0.222	0.120	0.087	0.111	0.050
13 to 15 years	-0.089	-0.152	0.075	0.004	0.008	0.934	0.005	0.005	0.905	0.080	0.122	0.380	0.023	0.029	0.619
16 years or more	0.079	0.155	0.079	0.132	0.307	0.009	0.110	0.136	0.012	0.169	0.258	0.080	0.115	0.166	0.016
Income															
1st quartile	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
2nd quartile	0.016	0.028	0.759	-0.086	-0.042	0.417	-0.066	-0.071	0.145	0.138	0.216	0.123	0.046	0.058	0.351
3rd quartile	0.040	0.075	0.436	-0.075	-0.033	0.513	-0.091	-0.109	0.036	0.092	0.171	0.263	0.055	0.077	0.247
4th quartile	0.059	0.097	0.296	-0.023	-0.012	0.831	-0.028	-0.029	0.558	0.101	0.150	0.279	0.046	0.055	0.382
N	617			584			624			221			624		
R-Square	0.0540			0.1343			0.3128			0.1227			0.1885		
Adjusted R-Square	0.0352			0.1161			0.2993			0.0721			0.1725		
F	2.87			7.38			23.18			2.42			11.83		
p>F	0.0007			<.0001			<.0001			0.006			<.0001		

Source: *Intentions de Fécondité*, 1998-2003, Institut National d'Etudes Démographiques ; weighted results.

Second, ideal and desired family size vary with respondents' socio-economic level: an interesting U-shaped pattern emerges, with respondents belonging to the lowest and highest educational classes having higher ideal or desired family sizes than middle class respondents. The hypothesis is that people at the two extreme of the social latter have in common a lack of motivation for upwards *mobility*; having ambitions for social mobility will put a check on desires for children, since it may appear difficult to have a large family and climb the social latter at the same time. Respondents in the upper quartile of educational attainment have especially high fertility desires and ideals. This U shape (weighted on the right) is observable only for people with 0 or 1 child: after 2 children, the relation between socio-economic level and ideal or desired number of children becomes linear (results not shown). As we will see below, the realization of fertility depends linearly on socio-economic status: the fact that the relationship between fertility ideals or desires and socio-economic status becomes linear for people who have two children or more means that people in the lower socio-economic quartile progressively abandon the idea of having a large family: again, experience brings ideals and desires closer to reality.

Planning to have a child in the next five years (column 3) depends on fertility ideals and desires. We did not introduce these variables in the model, but we see that, just like fertility ideals and desires, fertility intentions have a U-shaped relationship with income and educational level (especially at low parities, results not shown). Fertility intentions also depend strongly on what is perceived as the correct time and right situation to have children, that is, they depend on the *normative preconditions for parenthood*. Cohabiting greatly increases the probability of planning to have a child in the next five years: non-cohabiting men and women could very well have children, but they do not *plan* to do so. Fertility intentions are also much stronger at the middle reproductive ages (25 to 35). We see that the decline in fertility intentions with age is sharper than the decline in actual fertility with age. In other words, there is still room for women in their late 30s to have more children, if they plan to do so. Finally, and obviously, planning to have a (an additional) child also depends on how many children individuals already have: people with two children or more are closer to their desired family size and are thus less likely to plan to have more children.

The existence of a *stable conjugal unit* seems to play a very important role in individuals' ability to realize their fertility intentions (column 4): we see that respondents cohabiting in 1998 are more likely to achieve their fertility intentions than non-cohabiting respondents. When other factors are controlled for, the probability of realizing fertility intentions drops with age (an effect due to sterility), but this effect is not significative. Also, resources condition people's ability to achieve their fertility intentions: income level and educational achievement are positively related to the probability of having a child when planning to do so (whatever the number of children). In other words, resources seem here to decrease the *cost of children*: the relation between socio-economic status and actual fertility is linear, when its relation with fertility ideals, desires and intentions has a (tipped to the right) U shape.

Variations in total fertility during the 1998-2003 period combine the different effects on fertility ideals, desires, intentions and the ability to realize intentions. Without surprise, we see that fertility is higher at middle reproductive ages (age 25to 35), since, as we saw, people plan to have their children at these ages; in addition, respondents in the oldest reproductive age group (>35 years) have especially few children, an effect of increased sterility and of lower ideals, desires and intentions at these ages. Cohabiting couples are much more likely to have children during the study period, not only because respondents plan more often to have children when they are living together, but also because they are more successful in realizing their plans than non cohabiting respondents. Of course, the probability of having children in 1998-2003 decreases with the number of children in 1998, since people who have children in 1998 are closer to their desired family size. Finally, total fertility increases linearly with socio-economic status: the realization effect (linear) is stronger than the ideal / desires / planning effect (U shape). In other words, if the lowest and highest socio-economic classes both have greater fertility desires, and are both more likely to plan to have a birth compared to middle classes in 1998, only the latter are able to achieve these high ideals. A lats result is that men have (slightly) less children than women: they have lower fertility ideals, lower fertility desires, plan less often to have a child, and are less successful in achieving their plans, but all these effects were non significative in the previous models.

Dimensions of sociability and fertility outcomes

We see (Table 5) that having frequent contact with *supportive* relationships is positively related to having more children in the 5 years after the first survey (column 5), although the link is small and not highly significant in our data. Individuals with strong support networks seem to have higher fertility ideals and desires than more isolated people (column 1 and 2); on the other hand, having a strong support network does not seem to help individuals in realizing their fertility intentions (column 4).

Having *universal* rather than local forms of social commitments is related to having less children in the 5 years after the surveys (column 5). This relationship can be attributed to the fact that individuals with *local* forms of social commitment have a greater probability of realizing their fertility intentions (column 4), although they tend (but more weakly) to have lower fertility desires and ideals than people with universal forms of social engagement (column 1 and 2).

Finally, *practicing religion*, and engaging in social activities out of *duty* rather than for one's own self-fulfilment, are not related to the probability of having children in the five years following the survey (column 5). This apparent absence of relationship hides in fact two opposite effects: practicing religion and pursuing social activities out of duty tend to be both related positively to fertility ideals, desires and intentions (although this trend is not highly significant in our data) (columns 1-3), and to be related negatively to the capacity of realizing fertility intentions (column 4).

Table 5: Linear regression models: relations between three dimensions of sociability and fertility ideals, intentions and behaviours

	Ideal number of children 1998			Desired number of children 1998			Planning to have a child in the next 5 years 1998			Number of children, when planning 1998-2003			Total number of children 1998-2003		
	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur	b stand.	bêta	p-valeur
Intercept	0	2.500	<.0001	0	2.302	<.0001	0	0.327	<.004	0	0.647	0.055	0	0.291	0.057
Sociability															
Component 1: support	0.099	6.039	0.044	0.142	9.986	0.003	-0.054	-2.086	0.173	0.062	3.356	0.463	0.042	2.015	0.337
Component 2: universal	0.004	0.242	0.940	0.088	6.527	0.069	0.075	3.046	0.059	-0.210	-13.258	0.009	-0.069	-3.488	0.114
Component 3: duty	0.026	1.799	0.587	-0.008	-0.609	0.873	0.029	1.231	0.454	-0.131	-8.435	0.123	0.002	0.090	0.969
Religious practice	0.094	0.080	0.054	0.031	0.031	0.5130	0.043	0.023	0.272	-0.140	-0.105	0.083	0.004	0.002	0.933
Age															
15-24	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
25-34	-0.166	-0.108	0.120	-0.029	-0.053	0.776	0.291	0.283	0.001	0.041	0.066	0.772	0.226	0.271	0.018
35-45	-0.258	-0.258	0.022	-0.162	-0.288	0.140	-0.094	-0.091	0.304	-0.195	-0.355	0.167	-0.098	-0.118	0.330
Sex															
women	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
men	0.000	0.000	0.997	-0.058	-0.104	0.238	0.028	-0.027	0.489	-0.078	-0.108	0.351	-0.048	-0.058	0.287
Cohabitation															
no	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
yes	-0.055	-0.108	0.293	-0.019	-0.042	0.721	0.119	0.146	<.005	0.194	0.348	0.026	0.144	0.220	0.002
Number of children															
0 child	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
1 child	-0.026	-0.048	0.661	0.011	0.023	0.856	-0.143	-0.168	0.003	-0.165	-0.253	0.062	-0.152	-0.222	0.004
2 or more children	0.190	0.294	0.004	0.329	0.684	<.0001	-0.419	-0.406	<.0001	-0.084	-0.148	0.369	-0.307	-0.371	<.0001
Years of schooling															
10 years or less	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
11 or 12 years	-0.033	0.058	0.575	0.049	0.100	0.395	0.082	0.091	0.085	0.172	0.289	0.127	0.097	0.134	0.063
13 to 15 years	-0.041	-0.070	0.507	-0.081	-0.159	0.184	0.029	0.032	0.559	0.018	0.027	0.880	0.022	0.030	0.687
16 years or more	0.137	0.258	0.032	0.104	0.225	0.094	0.108	0.127	0.037	0.106	0.155	0.406	0.112	0.164	0.050
Income															
1st quartile	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
2nd quartile	0.082	0.142	0.275	-0.056	-0.112	0.448	-0.043	-0.047	0.479	0.179	0.275	0.171	0.016	0.022	0.808
3rd quartile	0.093	0.174	0.201	-0.006	-0.013	0.933	-0.080	-0.094	0.177	0.076	0.136	0.522	-0.006	-0.009	0.922
4th quartile	0.112	0.176	0.171	-0.000	-0.001	0.993	-0.043	-0.043	0.514	0.099	0.138	0.466	-0.009	-0.011	0.902
n		439			415			445			162			445	
R-Square		0.0857			0.1721			0.3879			0.2004			0.2590	
Adjusted R-Square		0.0510			0.1388			0.3650			0.1122			0.2313	
F		2.47			5.17			16.95			2.27			9.35	
p>F		0.0013			<.0001			<.0001			0.006			<.0001	

Discussion

Our analysis of the relationships between individuals' resources and position in the family life cycle on the one hand and fertility ideals, desires, intentions, and realizations on the other, confirms some very classic results. We show how fertility ideals and desires vary over the life cycle, as they tend to get lower and closer to actual fertility when individuals accumulate experience. This mechanism have been demonstrated by many authors over the years (Westoff and Ryder, 1977, Freedman et al., 1980, Morgan 1982, Monnier, 1987, Reignier-Loilier, 2002). We also show that births are overwhelmingly the fact of couples in the middle reproductive ages, not so much because people in other marital situations or at other reproductive ages cannot have children, but because these are the normative times and conditions for births in our societies. Finally, we show that middle class couples desire fewer births than either upper and lower class individuals. Ariès (1980) already showed how a desire for upwards social mobility (and investments in child quality) was at the heart of the first fertility transition. Today still, middle class individuals are more likely to be on the road to upward mobility the others; they may want to invest more in each child, and invest more in work than in family. However, couples' ability to realize their fertility intentions is today also linearly related to their resources, so that upper class people are the most likely of all to have large families (Kohler et Kohler, 2002, Diprete et al., 2003).

Our analysis raises here a methodological point: is the distinction between fertility ideals ("what is the ideal size for a family in this country"?) and fertility desires ("how many children do you want?") really pertinent? Our results show that both measures are close, and that most socio-demographic variables entertain the same relation to both variables. Fertility desires are in some regards more closely linked to the respondents' current situation: cohabitation is positively linked to fertility desires but not to fertility ideals. But altogether, the difference between these two variables seems fine, and it is perhaps not necessary to include both measures when fertility ideals are not the main topic under investigation

Our analysis of the relationship between individuals' commitments to varied areas of social life and their fertility outcomes globally confirms our hypotheses, and the results of both Syrkyn (2003) and Buehler and Fratczak's (2004) papers. The frequency of contacts with supportive relationships is positively (though weakly and not significatively) linked to the probability of having more children in the five years following the survey; and, as expected, relating to more universal communities (nations, associations) as opposed to local communities (neighbours, friends) is related to lower fertility. If having richer social networks and getting involved in local communities rather than more universal ones are signs of an orientation towards social cohesion (that is of a non-individualistic value orientation), as suggested by Syrkyn (2003), then our data show indeed that an individualistic life orientation leads to having fewer children.

However, other results tend to muddle this picture. First, the effect of having strong supportive relationships on fertility outcomes does not operate at the level of people's ability to realize fertility

intention: this results contradicts Buehler and Fratczak's (2004) hypothesis about strong support networks lowering the cost of children. On the other hand, the existence in France of strong family policies and child care opportunities for working women may diminish the importance of support networks as fertility enablers. On another note, in our data, religious practice and keeping social commitments out of duty are not positively linked to fertility outcomes, as opposed to our expectations. In the opposite, these two variables are negatively linked to the capacity of realizing one's fertility intentions.

These mixed results may of course be due to our small sample size; other ways of simplifying the respondents' patterns of social activities could also have been considered. But above these technical points, I think our contradictory results stem out of the basic weakness of how demographers conceptualise to date the link between individualization and fertility outcomes. The concept of "social cohesion" is not sufficient to take into account the multiple dimensions of the complex process of individualization under way in contemporary Western societies, and simple measures of the link between individuals' participation to varied communities and fertility outcomes do not seem quite adequate to render the complexity of this relation.

Without doubt, a process of individualization (and concomitant changes in gender relations) is currently and deeply changing most aspects of family life in Western societies: non formal unions are on the rise, divorces and recomposed families as well; the management of parental authority is changing, and ever more investments are made in children; women as well as men want to pursue non family goals, both delay their entry into parenthood, and both seek to combine work and family life. All these changes in the family can indeed be put down to the process of individualization (Lenoir, 2003, Godelier, 2004, de Singly 1996). But do all these changes necessarily produce below-replacement fertility? In other words, is there a direct link between the unquestioned historic process of individualization in contemporary Western societies, the contemporary family changes it produces, and very low fertility? The existing record already points to exceptions to this rule. For example, fertility is greater in the more individualistic and egalitarian U.S compared to Japan and Korea (Nukiro and Bumpass, 2004). More deeply, what are the exact causal mechanisms at work between individualization and fertility outcomes? What are the other mechanisms which may interfere with this relationship? Also, can this relationship be measured between individuals within a country at one historical time, as we did here? Or should different societies or different historical times be considered?

Another question is related to the pertinence of using measures of sociability as indicators of individualism or an individualistic value orientation. After all, individualization does not necessarily means getting more isolated (Augé, 2004): it means building relationships funded on other terms, where authority is negotiated, and where common interests have to be combined with (or be submitted to) individual interests. Social links are not necessarily less numerous in an "individuals' society", they are perhaps more fragile, but also perhaps easier to build. The density of the social fabric may not

change much overall: the density of social networks may be much more unevenly spread, and vulnerable people only be more likely to be isolated.

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