

INFLUENCES OF THE FAMILY OF ORIGIN ON FERTILITY BEHAVIOUR

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Abstract

This study examines to what extent people's age at first birth and final number of children are influenced by their family of origin. We take into account direct intergenerational transmission of fertility behaviour, family life experiences during youth, and the wider social context of the family of origin. Hazard regression analyses (N =9,173) and Poisson regression analyses (N =5,110) are performed using data from the 2002–2003 wave of the Netherlands Kinship Panel Study. Besides a positive relation between parents' and children's fertility patterns, we find that people who had positive family experiences during youth (people whose parents hardly had conflicts and people who had many contacts with relatives) have their first child at a younger age and have more children. The socioeconomic and cultural status of the parental family also affects fertility, and these effects are only partly mediated the child's own social status.

Key words: fertility, first birth, number of children, intergenerational transmission, family life, kinship networks, social status, The Netherlands

Introduction

The influence of the parental home on people's family-related behaviour is a well-established fact in social science (Thornton 1980). Studies of family formation emphasize the importance of family characteristics and influences in early life for family formation behaviour later in life (Rindfuss et al. 1988; Goldscheider and Waite 1991). With regard to fertility behaviour, research has shown that fertility patterns of parents and children are positively related. Many studies have found a positive correlation between number of children of successive generations (among others: Duncan et al. 1965; Johnson and Stokes 1976; Murphy and Wang 2001, see next section for more references). Likewise a positive relationship between parents' and their children's age at first birth has been found (among others: Manlove 1997; Barber 2000), although this subject has been studied less often. Moreover, most studies on this issue focus on the transmission of teenage motherhood.

To explain the positive correlation of fertility patterns across successive generations, the literature usually points to the importance of processes of socialization. Children are expected to be influenced by their parents either by observational learning (Murphy and Wang 2001) or by transmission of parental values and preferences (Thornton 1980; Barber 2000). However, socialization does not only operate through direct transmission of parental behaviours and attitudes on fertility. The preferences and behaviours regarding family formation of children are also influenced by the experiences with and attitudes about family life within the kinship network in which they are reared. Family dynamics, such as conflicts between parents or frequent contacts with non-residential relatives, lead to positive or negative experiences with family life during youth and might influence later fertility preferences and behaviour by increasing or decreasing children's "taste" for family. Hence, it could be expected that people who had positive experiences with family life during their youth are more eager to create a family of their own, implying that they will have more

children and have them at a younger age. An alternative assumption is that people with positive family life experiences during their youth are more inclined to produce a family like their parental family. In addition, the wider social context in which children are reared may influence children's fertility preferences and behaviour. Children are exposed to the dominant opinions within the socioeconomic and cultural circles to which the family of origin belongs. These social context influences of the parental home might be indirect and operate through the socioeconomic and cultural status of the children themselves, which is partly inherited from the parents.

Against this background, the aim of this article is to examine the extent to which fertility behaviour of children is influenced by their family of origin. More specifically, we will focus on the role played by (a) direct intergenerational transmission of fertility behaviour, (b) family experiences within the kinship network, and (c) the wider social context of the family of origin. We will take into account two aspects of fertility behaviour: age at first childbirth and final number of births.

By studying the influence of these dimensions of the parental family we will expand the existing literature in several ways. First of all we broaden the socialization perspective that focuses on intergenerational transmission of fertility behaviour by including the experiences with family life people have during youth. Second, we broaden the socialization perspective also by examining the influence of the wider social context in which the child is reared. In studies of intergenerational transmission of fertility, socioeconomic and cultural characteristics of the parents or children have sometimes been taken into account as control variables. In this study we include them in our theoretical framework and we systemically examine whether the influence of the parental socioeconomic and cultural status is mediated by the child's socioeconomic and cultural status. Third, we take into account both age at first childbirth and final number of children of successive generations, the first not being

extensively studied so far. This will give a broader picture of how the family of origin influences fertility: do certain characteristics of the parental family influence the timing of the first childbirth, the final number of children people have, or both?

To answer our research question we will use data from the first wave (2003) of the Netherlands Kinship Panel Study. This survey contains information on the respondents' and their parents' fertility and on the fertility of at maximum one of the respondent's siblings. It also includes other characteristics of the family of origin during the respondent's youth. We will conduct event history analyses to study effects on the timing of first childbirth and Poisson regression analyses to study effects on total number of births.

Theory and previous research

Processes of socialization are important mechanisms by which the family of origin may influence people's fertility behaviour. Previous research focused on the socialization of people's fertility behaviour through their parents' fertility behaviours and underlying values. Numerous studies in different time periods and countries have shown that there is a positive correlation between people's number of siblings and their own number of children (among others: Pearson and Lee 1899; Berent 1953; Duncan et al. 1965; Johnson and Stokes 1976; Anderton et al. 1987; Murphy and Wang 2001). Fewer studies have examined whether there also is a positive correlation between age at first childbirth of parents and their children. Most studies on this issue focused on the intergenerational transmission of teenage motherhood (Furstenberg et al. 1990; Horwitz et al. 1991; Kahn and Anderson 1992; Manlove 1997) and showed that children of very young mothers have a higher risk of having their first child at a young age as well. The studies by Barber (2000, 2001) and Steenhof and Liefbroer (forthcoming) were not limited to teenage births and also included men. These studies indicated a positive correlation between parents' and their children's age at first birth.

These intergenerational continuities in fertility behaviour are usually explained by a number of socialization-related mechanisms. Growing up in a family with many siblings may lead to a preference for a large family of procreation (Murphy and Wang 2001; Murphy and Knudsen 2002). In the same way growing up with young parents may lead to a preference to become a young parent oneself. In addition, the children's fertility behaviour might be influenced by their parents' fertility values and preferences (Axinn et al. 1994). The assumption is that the fertility behaviour of the parents reflects their values and preferences. Hence, transmitting these values and preferences to their children will lead to positive relationships between parents' and children's fertility patterns (Hendershot 1969; Thornton 1980; Barber 2000). Duncan et al. (1965) give a rationale for why people may want to have a family of similar size as their parental family. They argue that young people want to recreate the roles and relationships in their family of origin. The roles and relationships in the family of origin depend partly on the number of persons in that family, hence a tendency to recapitulate these relationships will induce a tendency to reproduce a family of similar size. Finally, during socialization parents may transmit knowledge about and attitudes on the use of birth control to their children (Thornton 1980; Anderton et al. 1987). The assumption is that knowledge about and a positive attitude towards birth control leads to smaller families. The socialization mechanisms sketched above, predicting transmission of fertility behaviour from one generation to the next, lead to the following hypotheses:

H1a) The younger one's parents were at first childbirth, the younger one will be at first childbirth.

H1b) The more siblings one has, the more children one will have.

To be able to disentangle intergenerational transmission of childbirth timing and of number of children, we will also examine the influence of number of siblings on timing of

first childbirth and the influence of parental age at first childbirth on the child's number of children.

Fertility preferences might also be influenced by the family of origin in more complex ways. For instance, Axinn and Thornton (1996) suggest that parental divorce leads to a more general negative attitude towards marriage and family life among both parents and children and therefore reduces the children's desire for children. Their results confirm their expectations. Likewise, Larson et al. (1998) show that children's feelings and attitudes towards marriage are more likely to be negative if their parents have a troubled relationship than if they have a good one. Based on these studies, one could assume that positive experiences with family life during one's youth lead to higher fertility by installing a strong 'taste' for family. If parents experienced a lot of conflicts during once youth, or if they got divorced, this is likely to lead to negative feelings about family life among their children. However, these general feelings about family life might also be influenced by contacts outside the nuclear family, in particular with other members of the broader family network. For instance, Bengtson (2001) emphasizes the important role that grandparents play in the socialisation of their grandchildren. Although intensive family contacts might also have negative aspects, we assume that intensive contact with extended family members generally lead to more positive feelings towards family life and thus to higher fertility preferences. Hence, we formulate Hypotheses 2a and 2b:

H2a) The more positive one's experiences with family life during youth, the younger one will be at first childbirth.

H2b) The more positive one's experiences with family life during youth, the more children one will have.

The extent to which one had positive or negative experiences with family life during youth might also influence fertility behaviour in an alternative way. We might expect that

people who had positive experiences with family life, are more inclined to create a family like their family of origin than people who had negative experiences with family life. A similar idea was formulated by Duncan et al. (1965), who proposed that whether a child has a satisfying or an unsatisfying experience in the family of origin, would affect the tendency to recapitulate his or her earlier experience when building his or her own family. Thus, in stead of the main effects of family experiences predicted in Hypotheses 2a and 2b, this assumption predicts that experiences with family life during youth interact with parents' age at first birth and with the number of number of children in one's family of origin. According to this assumption a person from a small family, who had positive family life experiences during youth, will have a small family of his or her own, whereas Hypothesis 2b predicts that such a person will have more children, at least more than a person from a small family with negative family experiences. Duncan et al.'s idea that familial satisfaction leads to a stronger influence of number of siblings on number of children has received support by studies conducted in the 1960s and 1970s (Westoff and Potvin 1967; Hendershot 1969; Bumpass and Westoff 1970; Johnson and Stokes 1976), but does not seem to have received attention by authors in the recent literature. Studies on intergenerational transmission of age at first childbirth did not include familial satisfaction. As an alternative to Hypotheses 2a and 2b, we propose:

H3a) The more positive one's experiences with family life during youth, the stronger the influence of one's parents' age at first birth on one's own age at first birth.

H3b) The more positive one's experiences with family life during youth, the stronger the influence of one's number of siblings on one's number of children.

In addition to these socialization processes, generated by specific fertility values and behaviours of the parents and by more general experiences with family life in the kinship network, fertility behaviour might be influenced by the wider social context of the parental family. It is well know that different social groups differ in fertility behaviour. We discuss

three processes by which the social context of the parental family, indicated by its socioeconomic and cultural characteristics, might influence the children's fertility behaviour. First, the socioeconomic and cultural grouping to which the parents belong might influence the children's fertility values and preferences. Second, the financial resources of parents could have an effect on their children's family formation behaviour. Third, socioeconomic and cultural status is likely to be transmitted to children, hence the effect of the parents' socioeconomic and cultural characteristics may be mediated by the effects of the children's own socioeconomic and cultural status, achieved as (young) adults.

With regard to the influence of parental socioeconomic and cultural status on children's fertility values and preferences, we assume that parents' educational level, whether the mother was employed or not and whether the parents were religious or not during the child's youth may have an effect. In families with higher educated parents or employed mothers, other life goals than family formation, such as having a career, might be more emphasized than in families with lower educated parents or non-employed mothers. Murphy and Wang (2001) found that the higher the parent's educational level, the less children their children have. Barber (2000) found that people whose parents' average educational level was high and whose mothers were employed when they were 15, are older when they have their first child than people with lower educated parents and whose mothers were not employed. Michael and Tuma (1985) found that the higher either parent's education, the older the child was at first birth (for white men and women and black men), and that white women whose mothers were employed when they were 14, have their first child at a younger age. Finally, religious exposure during youth might influence young adults childbearing dispositions, as most religions encourage childbearing (Pearce 2002).

Second, parents' financial resources can influence their children's fertility behaviour. On the one hand Easterlin's hypothesis (Easterlin 1969) predicts that the number of children

varies negatively with people's level of aspirations for material goods. Consumption aspirations are assumed to develop in the parental home, therefore Easterlin argued that parental income provides a proxy for the children's consumption aspirations. Hence, a negative effect of parental income or economic status on the children's number of children is expected. Thornton (1980) found this negative effect, Behrman and Taubman (1989) did not find an effect of parental income. The same reasoning could be applied to age at first childbirth; if one's consumption aspirations are high, one will postpone childbirth. On the other hand, a negative effect on age at first childbirth and a positive effect on number of children could be expected, because parents' resources can help young adults to settle and start a family. A study by Knijn and Liefbroer (2006) showed that parents with higher incomes financially support their adult children more than parents with lower incomes. Parents might help their children by contributing to the costs of the grandchildren, but also by financially supporting transitions that often precede having children, such as marriage or buying a house.

Possibly the influences of the socioeconomic and cultural positions of the parental family are indirect; as these positions are likely to be transmitted from parents to children. For example, Pearce (2002) found that children of mothers who frequently attended religious services have more pronatalistic fertility dispositions, but she also found that this effect operates entirely through the young adult's own religious participation and the importance they attach to religion. The negative effect of parental financial status on (expected) number of children found by Thornton (1980), is mediated through the second generation's educational level. However, the negative effect of parent's education on children's number of births found by Murphy and Wang (2001), remained after controlling for the child's educational level. Hence, the question is whether the effects of parents' social status on fertility are completely mediated by the children's social status or whether the parental

characteristics have an independent effect on their children's fertility behaviour. Many previous studies cannot answer this question, because they only include either parents' or children's social characteristics (e.g. Michael and Tuma 1985; Barber 2001; Murphy and Knudsen 2002), the studies by Thornton (1980) and Murphy and Wang (2001) being exceptions. Yet, these studies only examine number of children, not timing of childbearing, and they do not include social inheritance of religion or other cultural characteristics. In general, we expect:

H4a) The socioeconomic and cultural status of the family of origin influences one's age at first childbirth.

H4b) The socioeconomic and cultural status of the family of origin influences the number of children one will have.

In Table 1 we summarized the empirical effects we expect on the basis of the hypotheses discussed above.

Table 1 here

Method

Data

The data used in this study are from the Netherlands Kinship Panel Study, a large-scale survey in the Netherlands (Dykstra et al. 2005) among 8,161 men and women aged 18–79 from a random address sample of private households in the Netherlands. The data were collected in 2002 and 2003, using a combination of computer-assisted face to face interviews and additional self-administered questionnaires. The response rate was 45 per cent, which is comparable to that of other large-scale surveys in the Netherlands (Dykstra et al. 2005).

Response rates in the Netherlands are generally lower than in other countries (De Leeuw and

De Heer 2001). Women, middle aged respondents, and respondents with children in the households were overrepresented in the sample. A weight factor was constructed that corrects for these discrepancies between the sample and the population. All analyses were performed on the weighted sample. A comparison of the completed fertility of women aged over 40 in our sample with that of the population (Statistics Netherlands 2007a) indicated that all five-year cohorts in our weighted sample have a slightly higher average number of children than in the population.

In addition, questionnaires were completed by family members of the anchor respondents (alter respondents), among whom one randomly selected sibling aged 15 or older. Of the 8,161 anchor respondents, 7,545 (92 per cent) reported to have at least one living sibling and 60 per cent of them gave permission to contact the selected sibling. The return rate by the sibling respondents was 63 per cent, leading to a total number of sibling respondents of 2,853. We included these siblings in our samples.

Elimination of anchor respondents who did not return the self-administered questionnaire (8 per cent of the anchor respondents), respondents who had half- or stepsiblings (8 per cent of the resulting number of anchor and sibling respondents), respondents whose parents never lived together, who had their first child before the age of 16 and respondents whose mother had her first child before the age of 16, leaves us with a sample of 9,173 respondents (6,646 anchor respondents and 2,527 sibling respondents). Respondents who had half or stepsiblings were removed from our sample because half and stepsiblings are less likely to be brought up together than full siblings, therefore transmission of fertility behaviour may be different in families with half or stepsiblings (Murphy and Knudsen 2002). Our data do not contain information on whether the half siblings ever lived in the same household as the respondents, and for stepsiblings who have lived in the same household as the respondent, it is not known for how long they shared households. For the

analyses of the number of children, we selected women aged over 40 and men aged over 45, because they are likely to have finished their childbearing period. In the dataset, only about 2 per cent of the women had children above 40 and 2 per cent of the men had children above 45. The resulting sample for the analyses of number of children contains 5,110 respondents (3,751 anchor respondents and 1,359 sibling respondents).

Variables

The dependent variables in this study are age at first childbirth and final number of births. Age at first childbirth is measured in years. For further explanation of the construction of the dependent variable in the hazard analyses, see the 'Method of analysis' section. The dependent variable in the analyses of number of births, in which only men aged over 45 and women aged over 40 are included, is defined as the number of biological and adopted children including deceased ones. The number of people with adopted children in our sample is very small; 0.8 per cent of the anchor respondent in our total sample and 1.2 per cent of the anchor respondents in the sample with women over 40 and men over 45 has adopted children.

Next, we discuss the independent variables. Mother's age at her first childbirth was used, because this variable highly correlates with father's age at first childbirth and because preliminary analyses showed that it has a stronger influence on the respondent's age at first childbirth than father's age at first childbirth (see also Steenhof and Liefbroer, forthcoming). Number of siblings was measured as the total number of full biological and adopted siblings, including deceased ones.

We used behavioural indicators for family dynamics during youth that may have caused negative or positive experiences with family life. Variables that indicate experiences with family life in the nuclear family are the degree of conflict between the parents and whether the parents divorced or not. The degree of parental conflict was measured using four

items, which were preceded by the question: “Did any of the following things happen between your parents when you were about 15 years old?”. The items are: “How often did your parents have heated discussions?”, “How often did one of your parents put down and blame the other?”, “How often did your parents not want to talk to each other for a while?”, and “How often did arguments get out of hand?”. Answers were coded as 1 (never), 2 (once or twice), or 3 (frequently). We used the mean score of these items. The alpha is .77 for the sample for analyses of first childbirth as well as for the sample for analyses of number of births. Parental divorce was defined as the divorce or separation of the parents, including the separation of unmarried parents, and coded 1 if the parents divorced before the respondent turned 18 and 0 if the parents did not divorced, or divorced after the respondent turned 18. A variable that gives information on family life experiences within the extended family is the frequency of overnight family visits during the youth of the respondent. This was measured using the following questions: “Did you ever go and stay with your mother’s family when you were young (that is to say, until you were 15 years old)?”, “Did members of your mother’s family ever come and stay with you when you were young?”, “Did you ever go and stay with your father’s family when you were young?”, and “Did members of your father’s family ever come and stay with you when you were young?”. Answers were coded as 1 (never), 2 (occasionally) and 3 (frequently) and were averaged to obtain the score for our variable.

As indicators for the socioeconomic and cultural status of the parental family, we used mother’s educational attainment and employment status, father’s job status (as a proxy for family income) and religion of the parents, all but mother’s educational attainment referring the period when the respondent was (up to) about 15 years old. It is probably quite reasonable to assume that in most instances mother’s educational attainment has changed little since the child was 15. Mother’s educational attainment was chosen because it correlates strongly with father’s educational attainment, and because preliminary analyses indicated that it has a

stronger influence on the child's fertility than father's educational attainment. The variable was measured on a scale ranging from 1 (primary school not finished) to 10 (post-doctoral degree). Mother's employment status was measured by the question: "Did your mother have a paid job when you were growing up, that is to say until you were 15? Did she have a job most of the time, occasionally or did she hardly ever have a paid job?". We recoded the answers into 0 (occasionally had a job or hardly ever had a job) and 1 (had a job most of the time). The respondents were asked about the profession of their father when they were 15 (or younger if he did not have a profession at that time). Interviews used a built-in occupational classification table to code the answers into the 1992 Standard Occupational Classification of Statistics Netherlands (Statistics Netherlands 1993). These occupations were recoded in the International Socioeconomic Index of occupations (Ganzeboom et al. 1992), ranging from 10 to 90.

Parents' religion is based on whether the respondent indicates that his or her parents counted themselves as belonging to a particular religious denomination when the respondent was 15. We did not have reasons to expect large differences in fertility behaviour between Catholics and Protestants in the Netherlands. In the cohorts after born after 1950 Protestant women had more children, but in the first half of the twentieth century Catholic women used to have more children than Protestant women. Currently, differences in number of children among Catholic and Protestant women are small (Statistics Netherlands 2005). Therefore we did not distinguish between these denominations. In addition, numbers of parents with a non-Christian religion are so small (3.6 per cent of the religious parents), that we decided only to distinguish between religious and not religious. We created two dummies: whether or not both parents are religious (1 =yes) and whether or not one parent is religious, whereas the other is not (1 =yes). It has to be noted that information on all variables that refer to the parental family, is only acquired from the anchor respondents. Their siblings are given the same

scores. Only the variable indicating whether or not parents divorced before the respondent was 18, is individually scored. It is plausible to assume the siblings experienced the same situation in the parental home, although differences could arise when the age difference between the siblings is large.

With regard to the respondent's adult life socioeconomic and cultural status, it would be preferable to have information on his or her characteristics at the time of the childbearing period. However, this information is not available in our dataset. Therefore we used two current characteristics: educational attainment and religion. Education was measured on the same 10-point scale as used for mother's educational attainment. In the Netherlands few children are born during ages at which most women and men are still enrolled in school and Hoem and Kreyenfeld (2006) showed that in this situation using final level of education will only lead to small biases in the assessment of the effect of education on entry into motherhood. Religion was operationalised as whether the respondent counts him or herself as belonging to a particular religious denomination or not. Just as for the parents, we only distinguished between religious and not religious, not religious coded as 0 and religious coded as 1. With regard to using current religious status, a problem could be apostasy. However, a study of leaving the church in the Netherlands (Need and De Graaf 1996) shows that people are most likely to leave their faith when they are in their late teens, hence before having children. As they get older it becomes increasingly unlikely that they will leave their church. Using these current characteristics may lead to an overestimation of the effects of the child's adult life social status characteristics, but in this study we are mainly interested in whether adult life social status characteristics mediate the effects of parental social status characteristics, rather than in the size of these effects themselves. The respondent's job status is more likely to have changed since the childbearing period, therefore we did not include this variable. Unlike Barber (2001), we did not include information on the child's marital status in

our models for two reasons. First, the time-varying nature of marital status makes it difficult to include it in a meaningful way in the analysis of the number of children. Second, and more important, we feel that the decision to marry is highly endogenous to the decision to have children, and thus that including marital status as a covariate in our analysis of entry into parenthood might bias the estimates of other covariates in our model.

Finally, we used sex (0 =male, 1 =female), and birth year as control variables. The average age at first birth in the Netherlands decreased during the 20th century until 1970 and increased after that, and the decrease in number of children has stagnated since the mid 1980s (Statistics Netherlands 2007b), therefore we included square birth year as well. Birth year is centred to make the interpretation of its effects easier.

Method of analysis

To examine family influences on the timing of first childbirth, Cox regression hazard rate models were estimated with the hazard of first birth as the dependent variable. A hazard rate represents the risk that a person will experience an event, given that this person has not yet experienced the event. People were at risk from age 16 until the event (first childbirth) occurred. Time was measured as age in years. If respondents did not experience a birth before the interview, they were censored at their age at the time of the interview or, if they were older than 45 at that time, they were censored at age 45. Respondents who were older than 45 at the time of their first childbirth were also censored at the age of 45. The average observation period is 13.8 years. Because men generally have their first child later than women, the Cox regression analyses were stratified by sex.

To examine family influences on the final number of children, we used Poisson regression analyses (see Murphy and Wang 2002). A Poisson distribution represents the chance that an event (in our case: birth) occurs a certain number of times. Our data meet the

assumption of the Poisson distribution that the mean is equal to the variance: the mean number of children and the variance are both 2.1. Poisson regression models were estimated using a selection of the sample consisting of women above 40 and men above 45.

Analyses were performed using the Stcox and the Poisson procedures in Stata (StataCorp 2005). To account for the fact that some respondents were siblings, we corrected for clustering within families.

Results

Descriptives

In Table 2 we present the descriptive characteristics of the sample. In the sample for the analyses of age at first birth, 65 per cent has had at least one child. The average age at first childbirth is 28.1, whereas the average age at first birth of the respondents' mothers is 25.6 years. In the sample for analyses of number of births, the respondents have on average 2.2 children. Their average number of siblings is almost 3.8. A very low percentage of the respondents experienced the divorce of his or her parents before the age of 18. If we would have included respondents with half siblings and stepsiblings, this percentage would have been somewhat higher. Because the sample for analyses of first childbirth is on average younger than the sample for analyses of number of births (which only includes women older than 40 and men older than 45), the samples differ with regard to the socioeconomic and cultural variables. These differences are in line with expectations, e.g: in the younger sample the educational level is higher, a smaller percentage of respondents in this sample is religious, and a higher percentage of their mothers was employed during their youth.

Table 2 here

Age at first childbirth

Next, we turn to the results of the multivariate analyses. Table 3 shows three models for the hazard of first childbirth, Model 1 containing only variables that characterize the family of origin and the control variables. In Model 2 we added the interaction terms of mother's age at first birth and the variables indicating experiences with family life during youth. In Model 3 we added variables that refer to respondent's adult life social status: religion and educational attainment. Note that a positive effect on the hazard of first childbirth implies a negative effect on age at first childbirth. Model 1 shows first of all that, in line with Hypothesis 1a, the age of the mother at first birth negatively influences the hazard of first childbirth, implying that the older the mother was at first childbirth, the older her child is at first childbirth. Although we did not formulate an hypothesis on the effect of number of siblings on age at first birth, we included this variable in the model. It turns out that there is an independent effect of number of siblings on age at first childbirth, on top of the effect of mother's age at first childbirth; the more siblings one has, the younger one is at first childbirth. Michael and Tuma (1985) also found this result.

Further, we look at the variables that refer to the respondent's family life experiences during youth. The degree of parental conflict has a negative effect on the hazard of first childbirth, indicating that the more conflicts between one's parents one experienced, the older one is at first childbirth. The frequency of overnight family visits has a positive effect; the more visits, the sooner one has a first child. These findings support our hypothesis that people who had positive experiences with family life during youth will have their first child at a younger age (H2a). Yet, experiencing parental divorce before the age of 18, which we assumed to cause negative family life experiences, does not influence the timing of the first childbirth.

Next, we discuss the effects of the variables indicating the socioeconomic and cultural status of the family of origin. As expected, mother's educational attainment negatively influences the hazard of first childbirth; the higher a mother is educated, the more her child postpones first childbirth. Father's job status has the same effect: the higher his job status, the more his child postpones first childbirth. This might be considered as support for the idea that growing up in a well off family leads to higher consumption aspirations, which in turn leads to postponement of having children. Consequently, the contradicting assumption that a higher job status of the father leads to earlier childbearing of the children, because parents can financially facilitate their children having children, is not confirmed. Other variables indicating the social context in which one grew up, namely mother's employment status and whether one's parents were religious, do not affect the timing of first childbirth. Hence, Hypothesis 4a is partly confirmed.

To test Hypothesis 3a, suggesting that people with positive family life experiences during youth are more inclined to reproduce their family of origin, and thus predicting that the more positive family experiences, the stronger the effect of mother's age at first birth will be, we added the interaction terms of mother's age with respectively parental conflict, overnight family visits and parental divorce. The results of these analyses are presented in Model 2 of Table 3. None of these interaction terms has an effect, also not when added to the model one at a time (results not shown), thus Hypothesis 3a is not confirmed.

In Model 3, we added the respondent's educational attainment and whether he or she is religious. Not surprisingly, educational attainment has a negative effect and being religious has a positive effect on the hazard of first childbirth; higher educational attainment leads to postponement of first childbearing and being religious leads to earlier childbearing. We included these variables, not so much because we are interested in their effects on age at first childbirth, but to examine whether the effects of the socioeconomic and cultural status of the

parental family would remain or not. Model 3 shows that the effects of mother's educational attainment and father's job status remain significant, although the sizes are reduced by about one third compared to Model 1. This indicates that these effects are only partly mediated by the child's social status. In Model 1, the religious status of the parents does not have an effect, whereas Model 3 shows that after controlling for people's own religion, people with religious parents have their first child at an older age than people whose parents were not religious. Furthermore, the effects of mother's age at first birth and number of siblings do not disappear when controlling for the respondent's adult life social status, yet they are slightly reduced. The effect of parental conflict reduces by one fourth and the effect of overnight family visits increases by almost one fourth, but both effects remain significant.

Finally, in all three models the birth year has a negative effect on the hazard of first childbirth; the older one is, the younger one was at first childbirth. The effect of square birth year indicates that this effect is not linear; over time the average age at first birth first decreased followed by an increase.

Table 3 here

Number of births

Table 4 shows the Poisson models of the number of children of women above 40 and men above 45. Again, Model 1 only includes variables that characterize the family of origin and the control variables. As expected, one's number of siblings positively influences one's own number of children, confirming Hypothesis 1b. The coefficient of .022 indicates that every extra siblings leads to an 2.2 per cent increase in number of children ($\exp(\ln .022) = 1.022$), the other variables in Model 1 held constant. Mother's age at first birth does not influence her children's number of children.

The degree of parental conflict during one's youth has a negative effect on one's number of children. An increase from the lowest score on parental conflict (never any conflicts) to the highest score (frequent conflicts), results in a decrease in number of children of 12.0 per cent ($(\exp(\ln -.064))^2 = .880$). Frequency of overnight family visits during one's youth has a positive effect; the more visits, the more children. These findings support Hypothesis 2b, stating that positive family experiences during youth lead to having more children. Experiencing parental divorce before the age of 18 does not influence number of children. As excluding respondents with half and stepsiblings leads to excluding many respondents who experienced parental divorce, we also run our models for age at first childbirth and number of births with the samples including the respondents that have half and stepsiblings. In these samples parental divorce did not affect age at first birth and number of children either, nor did effects of parental conflict change.

Looking at the parental social status variables, we see that mother's educational attainment has a negative effect, implying that the higher one's mother's educational level is, the fewer children one has. If both parents were religious when the child was 15, the child has more children than if both parents were not religious. There is no difference between people of whom one parent was religious and people who grew up with parents who were both not religious. These effects indicate that the socioeconomic and cultural status of the family one grew up in, influences the number of children one has (H4b). The significant effects are in the expected directions. Mother's employment status and father's job status do not influence number of children.

We tested Hypothesis 3b, predicting that the more positive family experiences, the stronger the effect of one's number of siblings on one's number of children will be, by adding the interaction terms of number of siblings with respectively parental conflict, overnight family visits and parental divorce. The results of these analyses are shown in Model 2 of

Table 4. None of these interaction terms has an effect, also not when added to the model without the other interaction terms. Hence, neither Hypothesis 3a nor Hypothesis 3b is supported by our study.

In Model 3, we again added the respondent's education and whether or not he or she is religious, in order to see whether parental social effects are mediated. In accordance with expectations, educational attainment negatively influences number of children, and being religious positively influences number of children. The effect of mother's educational attainment is reduced by about one third but remains significant, indicating that this effect is only partly mediated by the child's educational attainment. Father's job status has a positive effect in this model, whereas it did not have an effect in Model 1. This lends support to the idea that parents may use their financial resources to support their children in the cost of having children and consequently does not confirm Easterlin's prediction that the economic status of the parental family negatively influences number of children. Furthermore, the positive effect of growing up with religious parents found in Model 1, becomes negative and non-significant when controlling for the child's own religion. The inclusion of the indicators for the social status of the respondent does not lead to significant changes in other effects.

Finally, in all three models birth year has a negative effect; people from early birth cohorts have more children than people from recent birth cohorts. The effect of square birth year shows that this effect is not linear, which is in line with the fact that the decrease in number of children has stagnated since the mid 1980s in the Netherlands.

Table 4 here

Conclusion and discussion

The parental home is an important factor in shaping people's behaviour. With regard to influences of the family of origin on fertility behaviour, the literature has focused mainly on direct transmission of fertility behaviour from parents to their children. We tried to generate new insights in the study of influences of the parental home on fertility behaviour by starting from a broad socialization perspective. We did not only examine the role played by direct intergenerational transmission of fertility behaviour, but also took into account family experiences within the kinship network, and the larger social context of the family of origin. Moreover, we studied two aspects of fertility behaviour: age at first childbirth and final number of births.

First, our hypotheses that age at first childbirth and number of births are positively related between generations (H1a and H1b) were confirmed. The effects of mother's age at first childbirth on the child's age at first birth and of number of siblings on number of children remained even when controlled for more variables than is usually done in other studies. In addition, it turned out that number of siblings influences age at first childbirth. Hence, timing as well as quantum of parents' fertility are important to explain the timing of their children's fertility, whereas for quantum of fertility, only the number of siblings is important.

Second, positive experiences with family life during youth lead to earlier childbearing and to having more children, supporting H2a and H2b. The same dimensions of family life affect the timing of first birth and number of children. Parental conflict during the youth of the respondent results in postponement of the first child and to having fewer children. Striking is that parental conflict is more important than parental divorce. This indicates that the fertility behaviour of the child is influenced by negative experiences in the parental home even when parents do not divorce. This result is in line with Fischer's (2004)

findings on the impact of parental divorce on other child outcomes. Her study showed that for a child's problematic behaviour and educational career, a parental divorce has almost no independent impact once the level of marital conflict is accounted for.

The finding that parental conflict leads to postponement of childbearing might be considered surprising, because in contrast to our hypothesis it could be argued that experiencing parental conflict leads to early home leaving and early childbearing as an escape from the home situation. However, studies on this issue mostly test the likelihood of premarital motherhood (McLanahan and Bumpass 1988; Russell 1994; Barber 2001) or teenage motherhood (McLanahan and Bumpass 1988; Kiernan and Hobcraft 1997). However, teenage motherhood is rare in the Netherlands. For instance, among women born in 1960, only 3.7 per cent had one or more children before the age of 20 (Statistics Netherlands 2007c). Besides, studies usually test the effect of divorce or living in a single parent family, which could lead to early teenage childbearing due to a lack of supervision (Hogan and Kitagawa 1985; Barber 2001) and not the effect of parental conflict.

Experiences in the extended family during youth appear to matter as well for fertility behaviour; many overnight family visits lead to early childbearing and to a higher number of births. We would like to emphasize that we used a limited operationalisation of family experiences in the larger family network. It could well be that these effects of the extended family are even larger, if better information on family experiences, like contact frequency and number and types of conflict within the extended family, could be used.

As an alternative to Hypotheses 2a and 2b, we proposed that positive experiences with family life makes people more inclined to reproduce their parental family. This hypothesis, that predicts that positive family life experiences lead to a stronger influence of parental fertility behaviour (H3a and H3b), was not supported by our results. Earlier studies though, provided support for the idea that familial satisfaction leads to a stronger influence of

number of siblings on number of children. Some of these studies had methodological limitations. For example, Westoff and Potvin (1967) and Hendershot (1969) studied only college women and the dependent variable in their studies was preferred family size, not completed fertility. Johnson and Stokes (1976) however, used longitudinal data on women of different educational backgrounds. These women's familial satisfaction at age 16 positively influenced the strength of the effect of their number of siblings on their completed fertility at age 40–44. A potential explanation for the difference in findings between their study and ours, is that familial satisfaction is a subjective, evaluative indication of how one has experienced youth in the parental family, whereas we used more objective indicators.

Besides family experiences in the kin network, the wider social context of the family of origin is also important in shaping fertility behaviour. A number of indicators of the socioeconomic and cultural status of the family of origin influence timing of first childbirth as well as number of births, confirming Hypotheses 4a and 4b. These effects are only partly mediated by the child's own social status achieved in adult life.

Mother's educational attainment negatively influences her children's hazard of first childbirth, implying a postponing effect on having children, and negatively influences her children's number of children. Once the child's own educational attainment is accounted for, the size of these effects is reduced, but they remain significant. Whether one's mother worked during ones youth or not, does not affect either aspect of fertility behaviour.

Like mother's education, father's job status negatively influences the hazard of first childbirth. This is also true when controlling for the child's education, showing that the effect is not completely mediated by the child's education, as Rindfuss and St. John (1983) argue. This could be explained by the fact that growing up in a well off family leads to higher consumption aspirations, which interfere with early childbearing. In addition, father's job status has a positive effect on number of births. Hence, father's high job status leads to later

childbearing and to having more children. These two effects cannot be explained by the same mechanism. The positive effect of father's job status on number of children suggests that the financial support of well off parents to their children (Knijn and Liefbroer 2006), makes them able to afford more children. Yet, this financial support do not lead to earlier childbearing. We assumed that the effects of parents' financial resources work directly, through shaping the child's consumption aspirations, or through financial support. Nonetheless, as we only controlled for the child's educational status, but not for the child's job status or income, the effect could partly be mediated by the child's own income.

People who grew up with religious parents have more children than children of unreligious parents, but this effect of parents' religion on number of children disappears when controlling for whether the child is religious. With regard to age at first childbirth, the results of parents' and children's religion suggest that unreligious children of religious parents are not only more likely to postpone childbirth than children who "inherited" religion from their parents, but even more likely to postpone childbirth than unreligious children of unreligious parents. It could be that the refusal of children to adopt the religious values of their parents has consequences for other aspects of their life style as well.

Taken together, the three innovative aspects of this study have shown to be worthwhile. First, we found that family life experiences during youth influence fertility in a direct way. Second, we found that parents' socioeconomic and cultural characteristics influence their children's fertility, and that these effects are only partly mediated by the child's social status achieved as an adult. Third, by taking into account age at first childbirth and number of births, we could show that the parental home influences both aspects of fertility more or less along the same lines; parents' fertility behaviour, parental conflict and contact with relatives, and the socioeconomic and cultural status of parental family affect both

aspects of fertility. In addition, the idea that positive family experiences lead to a stronger influence of parents' fertility behaviour, is not supported for either aspect of fertility.

We end with noting some limitations of this study and with suggestions for improvement of studying this topic. First, we only had relatively limited information on the experiences people had with family life during their youth. It would be interesting to include information on the relationships between the respondent and his or her parents and siblings and on the atmosphere in the parental home in general. Furthermore, a combination of objective variables (as we used) and evaluative variables would be desirable. Yet, to be able to include evaluative variables, such as familial satisfaction, one needs panel data.

Second, to examine to what extent the effects of socioeconomic and cultural status of the parental family on the child's fertility behaviour are mediated by the child's adult life status, it would also be preferable to have longitudinal data. As we had cross-sectional data, we only used religion and educational attainment, assuming that these characteristics are stable over the adult life course.

Third, we realise that the influence of the family of origin on fertility behaviour does not stop when the child leaves the parental home. The family size and quality of the family relationships during adulthood might influence fertility because the existence of kin support makes childrearing easier (Murphy and Wang 2001). However, studying this requires longitudinal data.

Finally, we treated fertility as individual behaviour (as is also done in most studies on intergenerational transmission of fertility behaviour), yet it is couple behaviour. Because of lack of data, we were not able to include characteristics of the parental family of both partners. Doing so would result in an interesting addition to current fertility research.

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Table 1 Summary of expected direction of effects on age at first childbirth and number of births

	Age at first childbirth	Number of births
Parents' fertility behaviour (H1a and H1b)		
Parents' age at first birth	+	
Number of siblings		+
Family life experiences during youth (H2a and H2b)		
Parental conflict	+	-
Parental divorce before 18	+	-
Contact with extended family members	-	+
Interaction terms of parents' fertility behaviour and family life experiences during youth (H3a and H3b)		
Parents' age at first birth * parental conflict	+	
Parents' age at first birth * contact with extended family members	+	
Parents' age at first birth * parental divorce	+	
Number of siblings * parental conflict		+
Number of siblings * contact with extended family members		+
Number of siblings * parental divorce		+
Social status of the family of origin during youth (H4 and H4b)		
Parents' educational attainment	+	-
Mother's employment status	+	-
Father's job status	+ or -	+ or -
Parents being religious	-	+

Table 2 Descriptive characteristics of the sample for models of age at first childbirth and the sample for models of number of births, The Netherlands 2002–2003

	Sample for models of age at first childbirth (N =9,173)		Sample for models of number of births (N =5,110)	
	M	SD	M	SD
Number of children	1.56	1.47	2.24	1.44
Distribution of number of children	per cent		per cent	
0 children	34.92		13.50	
1 child	10.67		9.26	
2 children	30.80		40.80	
3 children	15.65		22.88	
4 children	5.17		8.43	
5 or more children	2.79		5.13	
Observation duration ¹	12.94	6.78		
Age at first childbirth (only respondents who had a child)	28.09	4.70	27.58	4.79
Parental fertility variables				
Mother's age at first birth	25.62	4.10	26.09	4.31
Number of siblings	3.01	2.44	3.78	2.74
Family life experience variables				
Degree of parental conflict at age 15 respondent ²	1.44	0.47	1.40	0.47
Parental divorce before age 18 respondent ³	0.04	0.19	0.01	0.12
Frequency of overnight family visits during youth respondent ²	1.79	0.51	1.78	0.54
Parental social status variables				
Mother's educational attainment ⁴	3.59	1.86	2.97	1.57
Mother's employment status during youth respondent ⁵	0.18	0.39	0.14	0.35
Father's job status at age 15 respondent ⁶	47.10	15.80	44.86	15.01
Parents' religion at age 15 respondent	per cent		per cent	
Both parents not religious	15.97		13.21	
Both parents religious	76.58		81.31	
One parent religious, other not	7.45		5.48	
Adult life social status variables				
Educational attainment ⁴	5.97	2.27	5.57	2.41
Religion ⁷	0.56	0.50	0.63	0.48
Control variables				
Sex ⁸	0.50	0.50	0.54	0.50
Birth year ⁹	1958.23	15.79	1945.41	9.98

Notes: ¹Years. ²Scale: 1–3. ³1 =yes. ⁴Scale: 1–10. ⁵0 =not employed, 1 =employed. ⁶Scale: 10–90. ⁷0= not religious, 1 =religious. ⁸0 =male, 1 =female. ⁹Birth year was centred at its mean.

Source: Netherlands Kinship Panel Study 2002–2003

Table 3 Cox regression estimates of age at first childbirth (N =9,173), The Netherlands 2002–2003

	Model 1			Model 2			Model 3		
	B	Robust SE	B	Robust SE	B	Robust SE	B	Robust SE	
Parental fertility									
Mother's age at first birth	-0.024***	0.003	-0.026	0.014	-0.023***	0.003	-0.023***	0.003	
Number of siblings	0.021***	0.006	0.021***	0.006	0.015**	0.006	0.015**	0.006	
Family life experiences									
Degree of parental conflict during at age 15 respondent ¹	-0.093**	0.028	-0.179	0.173	-0.070*	0.029	-0.070*	0.029	
Parental divorce before age 18 respondent ²	-0.001	0.080	0.087	0.103	-0.022	0.081	-0.022	0.081	
Frequency of overnight family visits during youth respondent ¹	0.057*	0.025	0.101	0.159	0.070**	0.024	0.070**	0.024	
Parental social status									
Mother's educational attainment ³	-0.056***	0.009	-0.056***	0.009	-0.038***	0.009	-0.038***	0.009	
Mother's employment status during youth respondent ⁴	0.034	0.036	0.035	0.036	0.035	0.036	0.035	0.036	
Father's job status at age 15 respondent ⁵	-0.005***	0.001	-0.005***	0.001	-0.003**	0.001	-0.003**	0.001	
Parents' religion at age 15 respondent (Ref. cat. =Both parents not religious)									
Both parents religious	-0.019	0.037	-0.021	0.037	-0.150***	0.042	-0.150***	0.042	
One parent religious	-0.047	0.063	-0.047	0.063	-0.081	0.064	-0.081	0.064	
Interaction terms									
Mother's age at first birth * parental conflict			0.004	0.007					
Mother's age at first birth * parental divorce			-0.004	0.003					
Mother's age at first birth * overnight family visits			-0.000	0.002					
Adult life social status									
Educational attainment ³									
Religion ⁶									
Control variables									
Birth year ⁷	-0.028***	0.001	-0.028***	0.001	-0.026***	0.001	-0.026***	0.001	
Square birth year ⁷	-0.001***	0.000	-0.001***	0.000	-0.001***	0.000	-0.001***	0.000	
Log pseudolikelihood	-45309.4		-48459.4		-45220.5		-45220.5		

* $p < .05$; ** $p < .01$; *** $p < .001$.

Notes: ¹Scale: 1–3. ²1 =yes ³Scale: 1–10. ⁴0 =not employed, 1 =employed. ⁵Scale: 10–90. ⁶0 =not religious, 1 =religious. ⁷Birth year was centred at its mean.

Source: As for Table 2.

Table 4 Poisson regression estimates of number of births (N =5,110), The Netherlands 2002–2003

	Model 1		Model 2		Model 3	
	B	Robust SE	B	Robust SE	B	Robust SE
Parental fertility						
Number of siblings	0.022***	0.004	0.032*	0.014	0.018***	0.004
Mother's age at first birth	-0.001	0.004	-0.001	0.004	-0.002	0.004
Family life experiences						
Degree of parental conflict during at age 15 respondent ¹	-0.064**	0.021	-0.048	0.034	-0.052*	0.021
Parental divorce before age 18 respondent ²	-0.031	0.079	-0.047	0.080	-0.031	0.077
Frequency of overnight family visits during youth respondent ¹	0.035*	0.018	0.045	0.029	0.035*	0.017
Parental social status						
Mother's educational attainment ³	-0.022**	0.007	-0.022**	0.007	-0.015*	0.007
Mother's employment status during youth respondent ⁴	0.015	0.027	0.015	0.027	0.014	0.026
Father's job status at age 15 respondent ⁵	0.000	0.001	0.000	0.001	0.001*	0.001
Parents' religion at age 15 respondent (Ref. cat. =Both parents not religious)						
Both parents religious	0.081**	0.025	0.081**	0.025	-0.050	0.030
One parent religious	0.047	0.044	0.046	0.044	0.006	0.044
Interaction terms						
Mother's age at first birth * parental conflict			-0.004	0.008		
Mother's age at first birth * parental divorce			0.006	0.012		
Mother's age at first birth * overnight family visits			-0.003	0.006		
Adult life social status						
Educational attainment ³					-0.014**	0.005
Religion ⁶					0.204***	0.022
Control variables						
Sex ⁷	0.005	0.021	0.005	0.021	-0.016	0.022
Birth year ⁸	-0.008***	0.001	-0.009***	0.001	-0.006***	0.001
Square birth year ⁸	0.000***	0.000	0.000***	0.000	0.000***	0.000
Constant	0.711***	0.102	0.670***	0.112	0.717***	0.087
Log pseudolikelihood	-8162.5		-8162.2		-8121.2	

* $p < .05$; ** $p < .01$; *** $p < .001$.

Notes: ¹Scale: 1–3. ²1 =yes. ³Scale: 1–10. ⁴0 =not employed, 1 =employed. ⁵Scale: 10–90. ⁶0 =not religious, 1 =religious. ⁷0 =male, 1 =female.

⁸Birth year was centred at its mean.

Source: As for Table 2.