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Social Background and Becoming a Parent in Sweden

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Abstract: The purpose of this study is to examine what effect social background may have on the timing of becoming a parent in Sweden. By applying event-history techniques to data from the Swedish level of living survey (LNU) we try to separate the direct from the indirect effect of social background on timing of first childbearing. Few previous studies have focused on characteristics of social background and analysis of intergenerational effects on the age of becoming a parent. In this study, we show that the risk of becoming a parent is different for those who are mobile than for the socially non-mobile. The effect of social background on the propensity of becoming a parent is not just indirect via persons own educational careers. When we control for own educational level much of the impact of social background on the propensity of becoming a parent remains. We clearly show the existence of a significant direct effect of social background on the propensity to become a parent.

INTRODUCTION

Social scientists from many different disciplines have for a long time been interested in the association between family background and characteristics during adult life. When studying reproductive behaviors, the center of attention, has not surprisingly been the generation who actually is in the reproductive ages. Variables referring to the family of origin are much less commonly used. However, stratification research is mainly interested in the question to what extent the varying behaviors of the second generation are determined by characteristics of the first generation (Breen and Rottman 1995). By applying this type of focus we may be able to answer the question: to what extent is the timing of becoming a parent determined by the individuals' family of origin rather than by his or her current family situation. When social background has been included in studies of reproductive behaviors it has usually been indirectly through social mobility and its effect on family size and sib spacing. Much less common are studies linking social class of origin to timing of becoming a parent. In this paper, we try to separate the net effect of social background on fertility behaviors by applying event history techniques analyzing 4 940 individuals from the Swedish Level-of-Living Panel Survey.

The decision when to have a child may have tremendous implications for both parent and child. Most studies find that women who bear children at early ages are subsequently less likely to complete high school, less likely to participate in the labor force, and more likely to have low earnings than women who do not have children at early ages (Furstenberg et al. 1987, Hoffman 1998). On the other hand, while technology is pushing the biological limit of childbearing further, the treatments are not fully without risk for the health of both mother and child (Leridon 2004). The delay of first birth may also lead to uncertain parenthood because people get used to a childless lifestyle and the transition to parenthood becomes more difficult. The outcome of the interaction between the quantum effect (women are not having enough births to achieve replacement level) and the so-called tempo effect (women are delaying births to later ages, resulting in fewer births in the calendar years during which this delay happens) may lead to lower fertility rates (Bongaarts and Feeney 1998, Kohler and Philipov 2001, Lutz and Skirbekk 2006).

HOW DOES SOCIAL BACKGROUND AFFECT FERTILITY?

Individuals are born into a specific social class position, i.e. the social class of their parents. There are numerous ways to specify this class positions (typically fathers, mothers, household or head of family's class) (Erikson 1984). Nevertheless, the individuals class of origin will be an influence determinant in many aspects of the individual's future life, regardless of the individuals own adult characteristics (Breen and Goldthorpe 2001). Eventually, individuals will end up in a class of their own, either the same as their parents, or in case there are socially mobile, in another class. In stratification research the two terms origin (O) and destination (D) are the basic components. Although social mobility can be achieved by other means than education, also education is a frequently used component in stratification research. Not least, is education a central concept when researchers try to explain why and how class structures are reproduced from one generation to the other. These three factors, origin (O), destination (D) and education (E) is so common that researchers often talks about an OED-triangle (Figure 1a). This paper builds on the concept of the OED-triangle but with the demographic variable of first birth risk as the destination variable (Figure 1b).

FIGURE 1a & 1b. OED-TRIANGLE AND TRIANGLE WITH DEMOGRAPHIC VARIABLE AS DESTINATION.

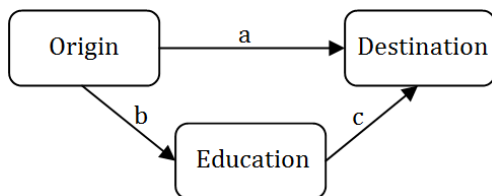


Figure 1a

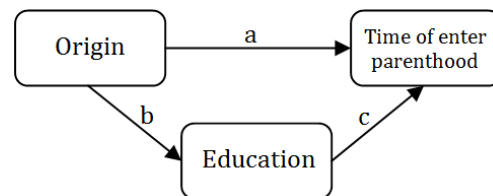


Figure 1b

The purpose of this paper is to examine what effect a person's social background or class of origin (connection a) may have on the timing of becoming a parent controlled for some other known variables that effect the timing of entry into parenthood. One of the most frequently used variables to explain postponement of childbearing is educational level (scb 2002a). It should not be hard to realize that this variable is highly affected by social background. While educational level is one of the most influential variables on the timing of becoming a parent (connection c, Figure 1a and 1b), educational level itself is

highly correlated with social background (Jonsson 1988, 2001 Jonsson and Erikson 1997a, 1997b) (connection b).

As already mentioned, the most common way to include social background in studies on fertility is indirectly by studying the effect of social mobility on family formation and fertility. There exists a rather large set of theories on the relationship between social mobility and fertility (See Bean and Swicegood (1979) for a thoroughly conducted review of the literature on social mobility and fertility). On the other hand, fairly little has been written about the direct effect of social background on fertility. However, there exist some predictions about the effects of social background on other demographic behaviors that possibly can be used to explain the effect on social background on fertility.

In an attempt to explain how social background may affect the timing of transition to first marriage, a transition that shares many similarities with the transition to parenthood, Axinn and Thornton (1992) identifies differences in parental resources as one possible explanatory variable. Parents with higher income or educational level are thought to delay the transition to marriage by reducing their children's motivation to leave home by getting married. Growing up in a wealthier home environment may also raise the child's aspirations, something that also should lead to a delay in marriage. Wealthier parents are not only more likely to have higher educational and career aspirations for their children, they also have more and stronger resources to effect their children's decision about marriage.

An interesting suggestion by Hoem and Hoem (1992) poses that one possible explanation for why children to highly educated parents have higher divorce risks, may be that families where the parents hold higher educations are different from other families because of some unspecified factor in the bourgeois culture. In terms of fertility there might be behaviours in the working class culture that might affect what sets of influence the parents expose the child to. One possibility might be that less educated parents holds less liberal values of family formation and thus are less supportive of a child's decision to postpone parenthood. Socialization is broadly composed by intergenerational processes involving the harmonization of an individual's behaviors with that of their cultural environment. Socialization through childhood leads to

similarity in attitudes, beliefs and behaviors across generations. The social or cultural environment may have its base in various social or cultural groups, including social class. Instead of seeing the actual mobility between origin and destination as the source to different behavior among the mobile individuals the socialization perspective views any differences between the behaviours of mobile and non-mobile individuals as due only to socialization in different social environments. The mobile individual has, in contrast to the non-mobile individual, been affected both by the class of origin and the class of destination (Shaffer 1994, Gallo and Mathews 2003). Among other behaviors, behaviors related to fertility (e.g. timing, sib spacing and number of children) may be shaped through socialization.

PREVIOUS RESEARCH

Although intergenerational patterns are more difficult to study because they require information about more than one generation, a number of studies have shown that demographic behaviors appear to be transmitted across generations. E.g. Dronkers and Härkönen (2008) and Gähler et al. (2009) shows that individuals whose parents divorced have a significantly higher risk of divorce. Gupta (2006) shows that the male participation in household work appear to be transmitted across generations. Axinn and Thornton (1993) shows that parental attitudes toward nonmarital cohabitation influence children's cohabiting behavior even after controlling for children's own attitudes. Tiikkaja et al. (2009) and Tiikkaja and Hemström (2008) shows that, although adult class is much closer related to cardiovascular mortality, childhood class has a significant independent effect on cardiovascular mortality, too.

When it comes to intergenerational patterns of fertility the literature can be divided into two major parts. There exists a large quantity of literature on the intergenerational effects of teenage parenthood, particularly in the US and UK. Being a teenager at first birth appears to have effects on timing of parenthood across generation for both women and men. E.g Hardy et al (1998), Kahn and Anderson (1992), McCue Horwitz et al (1991), Fagot et al (1998), Serbin et al (1996), Manlove (1997). The second major topic on intergenerational patterns of fertility is final family size across generations. A large quantity of literature exists that examines the impact of number of siblings on ultimate

fertility. (E.g. Murphy and Wang (2001), Murphy and Knudsen (2002), Thornton (1980), Zimmer and Fulton (1980), Axinn et al. (1994), Katner and Kiser (1954)). Fewer have examined intergenerational patterns of the timing of becoming a parent at post-teenage ages. However, there are exceptions:

Using data from the municipal population register of the Netherlands, Steenhof and Liefbroer (2008) shows a high degree of intergenerational transmission in the age at which people have their first child. The degree of transmission from mothers to children seems to increase for successive cohorts. Though there are some studies, even fewer have managed to include characteristics of social background or other equivalent information as control variables in the analysis of the intergenerational effects on age at first birth:

In a study on New York city women who became mothers for the first time during the first half of the 1970s, Presser (1978) shows that the women's own mother's age at first birth is a strong predictor of the ages of their first birth, when controlled for socioeconomic background.

Using data from an intergenerational panel study of mother-child pairs, Barber (2000) shows an intergenerational influence on the timing of entry into parenthood in the US. A young woman's grandfather's occupation influences her odds of a premarital first birth. Barber finds that young women whose grandfather had an upper blue collar occupation have approximately double the premarital first birth rates of young women whose grandfather had an upper white collar occupation.

Perhaps the best study in which age at becoming a parent and social background is taken into account is Bernhardt's (1989) study on the 1953 Stockholm Metropolitan birth cohort. Using longitudinal data comprising all women belonging to the 1953 Stockholm cohort, Bernhardt shows that social background can be used as an important explanatory variable when predicting an individual's timing of entry into parenthood. The effect of the individual's social background on timing of becoming a parent exists independently of the impact of other variables such as the women's own educational career. The study shows that women whose father mainly worked as an unskilled

worker during her childhood is more than twice as likely to have become a mother before the age of thirty than an upper middle class daughter. When other factors, such as mother's age at first birth, completed educational level, and current activity (student or non-student) are held constant the daughters to unskilled workers still have a fifty per cent higher first-birth propensity before the age of thirty than upper middle class daughters do.

DATA AND METHOD

The data used in this study come from the Swedish Level of Living Survey (LNU). LNU is a longitudinal study that was first conducted in 1968, consisting of a nationally representative sample of the Swedish population. The sample for the survey is a random sample of 1/1000 of the Swedish population aged 18 to 75. The survey was repeated in 1974, 1981, 1991 and 2000, with new recruitment of younger individuals and immigrants in order to maintain a representative sample. (for details, see <http://www.sofi.su.se/LNU2000/english.htm>). For the purpose of this study, a data set has been constructed containing respondents aged 18–75 from the LNU study of 2000. The response rate for LNU 2000 was 76.1%.

The basic time variable in this study is **age of index person**. Respondents are included regardless if they ever get a child or not. The age is given in months since the respondent's fifteenth birthday. We follow respondents from age fifteen to a first birth, age 45 (55 for men) or the time of interview. The respondents are at risk of becoming a parent (for the first time) until the time of the event (onset of pregnancy) or the age at the interview if no event has occurred until then. There is only one possible transition, i.e. becoming a parent (onset of pregnancy), and there are no competing events because a respondent can only leave the group of childless by becoming a parent. The time unit in the main model is month. When analysing some subgroups the time variable will in some cases instead be **time since finishing education**. For summary statistics on the variables used in this paper see Table 5 in Appendix 1. Our main variables are as follows:

Gender is included in the models even if we think we should be able to generalize the intergenerational processes for male and female individuals alike. For instance, if we

believe that parents' social background affect their children's age at becoming a parent we should expect that parents affect both sons and daughters toward earlier or later childbearing. However men enter parenthood later than women, on average. Therefore, because parents' influences on their children's behavior are likely to decline as the child ages, sons' childbearing behavior may be less affected by parents' preferences (Rossi and Rossi 1990).

Social background is obviously included in the analysis as the primary purpose of this study is to analyse the relationship between social background and age of becoming a parent. In the Swedish Level of Living Survey the respondents were asked what their parents' main occupation was during childhood¹ (LNU 2000). These answers of parents' main occupation were then used to define social background using an index of socioeconomic position that follows the official Swedish socioeconomic index (SEI). Distinctions between self-employed and employees, and between employees with or without subordinates are based on additional information (Andersson, Erikson, and Wärneryd 1981, SCB 1982). The social class of the household rather than that of the individual, i.e., the highest SEI of both parents, is used (Erikson 1984). 26 cases have been excluded from the analysis because the respondent could not be assigned a social background. In its most aggregated form, which is the one used in this study, the classification of social background consists of four groups: (a) Workers (Unskilled manual workers and Skilled manual workers), (b) Lower middle class (Assistant non-manual employees and Intermediate non-manual employees), (c) Upper middle class (Employed and self-employed professionals, higher civil servants and executives), and (d) Self-employed (other than professionals) and farmers. The last category - Self-employed and farmers - may be a bit problematic when it comes to interpretation in terms of social stratification. Especially farmers but also self-employed individuals are more difficult to position in a hierarchical class structure. The unskilled manual worker and the farmer may share some characteristics that would make them equal, but on the other hand great differences divide them. For example, farmers have a freer work, but with greater risks of loss of income, while both farmers and unskilled manual worker may share the experience of physical labor (Erikson and Goldthorpe 1992). Because of

¹ The question in LNU-questionnaire - Looking back at your childhood - up to age 16 when you (mostly) were at school - what was your father's/mother's (stepfather's/stepmother's) main occupation?

problem of positioning farmers and self-employed individuals in a social class structure, the main focus in this study is on the other social backgrounds which are easier to interpret in terms of stratification.

Birth year is included in the analysis of the relationship between social background and timing of becoming a parent, for two reasons. First, to enter parenthood before age 20 was maybe not the same experience in the 1950s as it was in the 1980s. What is considered young and old ages of becoming a parent has changed over the century (SCB 2002b). We therefore have good reasons to include birth cohort in the analysis. Second, as the social mobility has increased in Sweden during the twentieth century it may not be the same experience to move up or down the social ladder in the 1990s as it was in the 1940s (Jonsson and Erikson 1997a). Also the composition of social classes has changed during the twentieth century. The proportion of the population growing up in working class or farmer families was significantly higher in the early 1900s than it is today. Consequently we have a second good reason to include birth year in the analysis. The variable for birth cohort are grouped into six groups (birth year 1925-29, 1930-39, 1940-49, 1950-59, 1960-69, and 1970-81). Age at first birth has changed over the time. Therefore we need to control for cohort to get the background effect right.

The variable for **educational level** is a time-varying covariate and measures the respondent's highest education attained at each month since the fifteenth birthday, as reported by the respondent him/her self² (LNU 2000). The variable measures the educational history up until the time of the interview. The classification of educational level consists of two groups: (a) Lower education (Compulsory schooling or Short secondary education, Secondary education, Vocational Training above High School), and (b) High education (University degree or short university courses). Another educational variable is used, namely a dummy variable that indicate if the respondent is **currently enrolled** as a student. Several studies have shown that Swedish men and women regard having completed an education as one of the most important aspects for their decision to become parents (SCB 2001, Kravdal 1994, Sobotka 2006). Thus, for each time unit (months since fifteenth birthday) the respondent can be assign a value that indicates a

² The question in LNU-questioner - What type of education have you had or what type are you currently pursuing?

highest educational level and a value that indicates that the respondent is still enrolled in education.

In this study educational level should be understood as a proxy variable for own SEI. As the purpose of this paper is to examine the effects of social background on the timing of becoming a parent controlled for own social position the perfect dataset would contain both the data on social class in family of origin and family of destination. However, this is not the case. The LNU-data, given for this study, only contains information on respondents' own SEI at the time of interview, but these data do not correspond to the risk of becoming a parent at each time unit. Individuals do normally not achieve their final occupational class at the same time they finish their education. Previous research have shown that the final occupational class usually is achieved in the thirties to forties while final educational level is achieved significantly earlier (Härkönen and Bihagen 2010). In this study, current education as derived from reported histories on educational attainment is being used as proxy for own SEI.

As already made clear, the two covariates social background and own education level are closely related. In order to understand and be able to interpret the effect of social background and own education level on fertility behaviours we may want to see what the relationship between these two variables looks like. In Table 1 we see a cross-tabulation of social background and educational level at age 35. Since not all respondents have turned 35 years of age at the time of the interview the number of observations included in this cross-tabulation are fewer than those included in the further analysis. The patterns in Table 1 shows very clearly the existents of a social bias in the recruitment to higher education. In percentage, about 10 percent of those with working class background have accomplished high education at the age of 35. The same figure for those with upper middle class background is almost 50 percent.

TABLE 1. CROSS-TABULATION OF EDUCATIONAL LEVEL AND SOCIAL BACKGROUND

		SEI				Total
		Working class	Lower middle class	Upper middle class	Self-employed & Farmers	
Educational level	Low education	1 225	442	156	684	2 507
	High education	153	174	123	78	528
	Total	1 378	616	279	762	3 035

Method

Relative risks of becoming a parent are calculated by applying event-history techniques which maximise the LNU data's longitudinal and individual-level information. We use a Cox proportional hazards model in order to estimate the propensity to first birth. The intensity model is highly useful when analysing life-course data, as it takes the time that a person is under risk of experience a given event into account. The respondents' risk of becoming a parent is modelled as a function of the respondents' different characteristics at every time unit. When no consideration is taken for interactions of variables the function can be written as follows;

$$h(t) = a_i b_i c_i$$

Where $h(t)$ is the risk of becoming a parent considering the values of covariates a , b and c .

RESULTS

Table 2 reports the outcome of univariate cumulative "survival functions" for different population subgroups. The numbers in Table 2 show the cumulative proportions that have become parents by ages 20, 30 and 40. We see that educational level has a high impact on when a person becomes a parent. In Table 2 educational level refer to the highest level of education at the time of interview and not to the time varying variable used in our event history analysis. Because we do not know all respondents final educational level, in cases of future updates of education, any assumptions about this variable and the propensity of having a first child should be done with some caution. 16 percent of the respondents with low education has had their first birth at age 20. The

same number for those who reported High education is less than 3 percent. This is in line with previous research (SCB 2002a). What is interesting is that those with low education are the ones who become parents to the greatest extent at the ages of twenty and thirty but to the lowest extent at age forty. At thirty years of age, approximately two out of three respondents with low education has become a parent while every second respondent who reported high education has entered parenthood at the same age. At forty years of age, 77-79 percent of respondents have become parents, regardless of their educational level. Previous research (Andersson et al. 2009) have shown that even though educational level affects the timing of becoming a parent, the differences in ultimate childlessness between different education levels are relatively small.

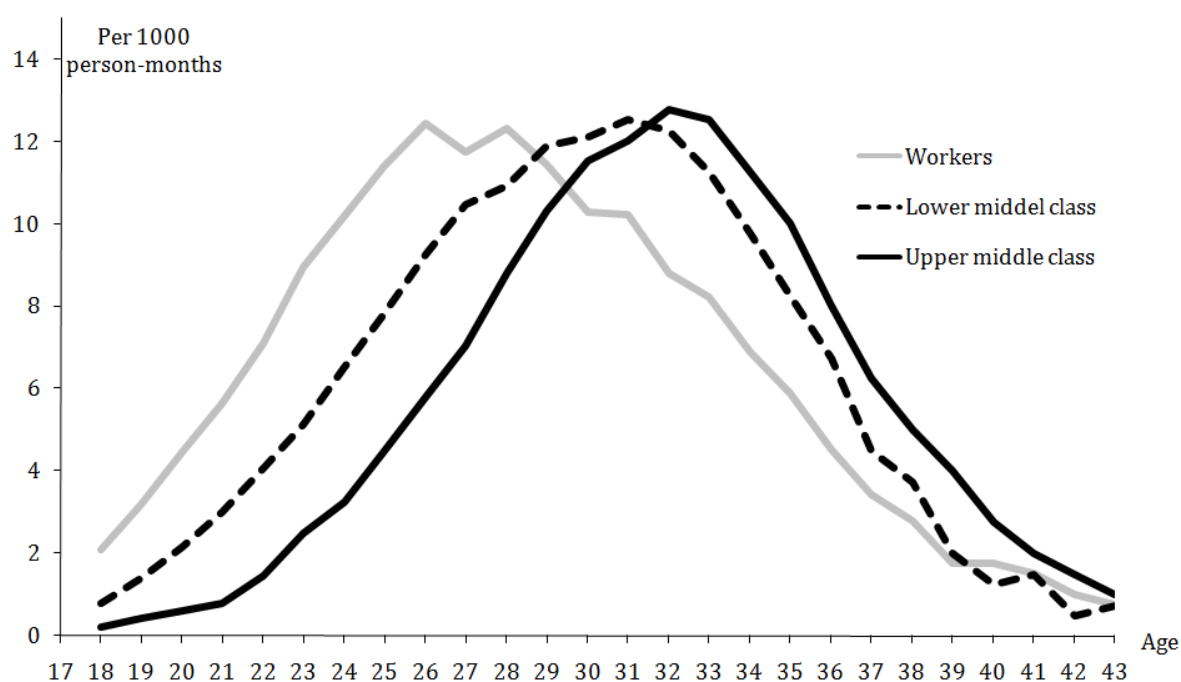
TABLE 2. CUMULATIVE PERCENT THAT HAVE BECOME A PARENT,
BY EDUCATIONAL LEVEL, AND SOCIAL BACKGROUND.

Covariats	Percent who have become parent by age		
	Age 20	Age 30	Age 40
Educational level			
Low education	16.0	67.1	76.6
High education	2.7	53.5	79.0
Social background			
Working class	12.0	68.7	82.9
Lower middle class	3.5	54.2	80.1
Upper middle class	2.4	47.9	74.1
Self-employed and Farmers	9.1	66.8	82.8

Finally, we see that social background seems to affect when a person becomes a parent. 12 percent of the respondents with a social background of working class have become a parent at age twenty. The same number for those with social background labeled Lower middle class or Upper middle class is almost 10 percent lower (3.5 percent and 2.4 percent). If we look at the oldest age shown in Table 2, we see that the difference between working class and lower middle class almost has disappeared, while those with social background labeled upper middle class still has not become parent to the same extent. At age forty, more than 80 percent of those born to parents belonging to working class or lower middle class have become parents. Meanwhile, three out of four individuals whose parents belong to upper middle class had become parent at age forty.

Figure 2 shows first-birth intensities (observed births/exposure rate) by age and social background and confirms the relationship between social background and the timing of becoming a parent. Individuals whose parents were skilled or unskilled manual workers have their first birth intensities peak at age 25. The corresponding rate for individuals whose parents were lower or upper middle class does not peak until five to eight years later. From the age of thirty and about five years on individuals whose social background are labeled lower or upper middle class has their highest first birth intensities. After the age of 37 there is relatively little difference between the three groups of social background.

FIGURE 2. OBSERVED OCCURRENCE/EXPOSURE RATES³ OF FIRST BIRTH, BY SOCIAL BACKGROUND.



Even if these findings points towards a relationship between social background and the timing of parenthood, they may raise as many questions as they answer because we have not controlled for any other covariates, especially educational level. We therefore continue the analysis but now with control for other covariates.

³ The lines in Figure 3 and 5 have been smoothed by using central moving averages for an explanation of moving average see Newbold et al. 2007 pp. 727-729

Table 4 shows the relative risk of becoming a parent. In the main model (Model 2) all five covariates are included. Model 1 contains all covariates except the ones that measures educational level and educational enrollment. This to emphasize the differences between direct and indirect effects of social background on the propensity to become a parent. As can be seen in Table 2, most but not all of the values for the covariates, used in the main model, are highly significant.

According to these results, a person that is currently enrolled in education has a 44 percent lower risk of becoming a parent than an individual which has completed his or her highest education. Almost as influential is gender. Seen to the results of the main model a male is 37 percent less likely to become a parent than a female with the same age, educational level, social background and birth year. Looking at the relative risks for the different cohorts these results confirm previous research (SCB 2002a) that shown a trend initially toward earlier parenthood followed by a trend of slower transition.

From the main model (Model 2) we see that those who have Low education are at lower risk of becoming parents then the ones with High education. The ones with High education have a 16 percent higher propensity of becoming a parent compared to those with low education. To be currently enrolled in education lower the risk of becoming a parent with approximately 45 percent. In short, the variable of education in Model 2 shows that higher education leads to higher propensity of becoming a parent at comparable ages and once a person has finished his or her education.

Since the purpose of this study is to examine what effect a person's social background may have on the timing of becoming a parent when controlled for own social class (own educational level), both a model (Model 2) with own educational level and a model (Model 1) without educational level are included in the analysis. This is to better illustrate the direct and indirect effects of social background on fertility. If all of the effect of social background on the propensity of becoming a parent were indirect through social bias in recruitment to higher education, there would be no or very small differences in the values of relative risks of social background in Model 2.

TABLE 4. RELATIVE RISK OF BECOMING PARENT FOR FIRST TIME. BY GENDER. BIRTH YEAR. EDUCATIONAL LEVEL. EDUCATIONAL ENROLLMENT AND SOCIAL BACKGROUND.

Covariats	Model 1	Model 2
Gender		
Female (ref.)	1	1
Male	0.65***	0.63***
Birth year		
1925-29 (ref.)	1	1
1930-39	1.24***	1.26***
1940-49	1.36***	1.43***
1950-59	1.03	1.09
1960-69	0.91	0.93
1970-81	0.60***	0.62***
Education		
Low education (ref.)		1
High education		1.16***
Enrolled in education		
No (ref.)		1
Yes		0.56***
Social background		
Working class (ref.)	1	1
Lower middle class	0.81***	0.84***
Upper middle class	0.64***	0.70***
Self-employed and Farmers	0.96	0.97
N	4 893	4 893
Log likelihood	-25 307	-25 214
df	9	11
Number of events	3 303	3 303
Time at risk (months)	795 991	795 991

Notes: * indicates a p value of less than 5%. ** indicates p value of less than 1% and *** indicates statistically significance with the probability of a random effect lower than 1 per thousand (.000).

In Model 1, we can see the effect of social background on the propensity of becoming a parent when we do not control for educational level. The relative risk of becoming a parent is about 20 percent lower for those with lower middle class background compared to those with working class background. Furthermore, the relative risk of first birth is 36 percent lower for those with upper middle class background compared with those with working class background. When we include own educational level in the

model, the relative risk of becoming a parent for those with lower middle class background is 16 percent lower compared to those with working class background. This gives a decrease with 3 percentage points when we include own educational level in the analysis. Similarly, when we control for education the relative risk of becoming a parent is 30 percent lower for those with the upper class background compared to those with working class background. This gives a decrease in relative risk of 6 percentage points when we include own educational level in the analysis.

As already stated, we should expect no differences in the values of relative risks of social background in Model 2 (i.e. that all relative risks become 1), if we thought that all of the effect of social background on the risk of becoming a parent only existed indirectly through skewed recruitment to higher education. However, these results undoubtedly argue for the existence of a significant direct effect of social background on the propensity to become a parent, even when we control for individuals' own level of education. The log likelihood statistics of the two models indicates that educational level and educational enrollment also is important and statistically significant in its association with first birth risk.

These results clearly show that social background has an effect on individual's propensity to become a parent even when we control for the individual's own adult education. We can therefore consider the hypothesis, that we defined in the beginning of this paper, that stated that it exists an intergenerational net effect between social background and the propensity of becoming a parent, to be true. In the rest of this section on results we will look deeper in to some interaction effects and also have a look at what particular effects social background may have on the timing of becoming a parent.

When we test the main model for interactions between various covariates we find significant interactions between both social background and own educational level, and between social background and gender. Consequently we have good reasons to suspect that the effect of social background on the risk of becoming a parent varies depending on the value of educational level and gender and vice versa. Therefore, we continue the

analysis by presenting separate models by social background (model 3 to 6) and gender (model 7 and 8) in Table 4.

Models 3-6 in Table 4 give analyses on each of the four levels of social background, separately. This is to better highlight the effect of social background and the timing of becoming a parent. Model 7 and 8 provide analyses on men and women, separately.

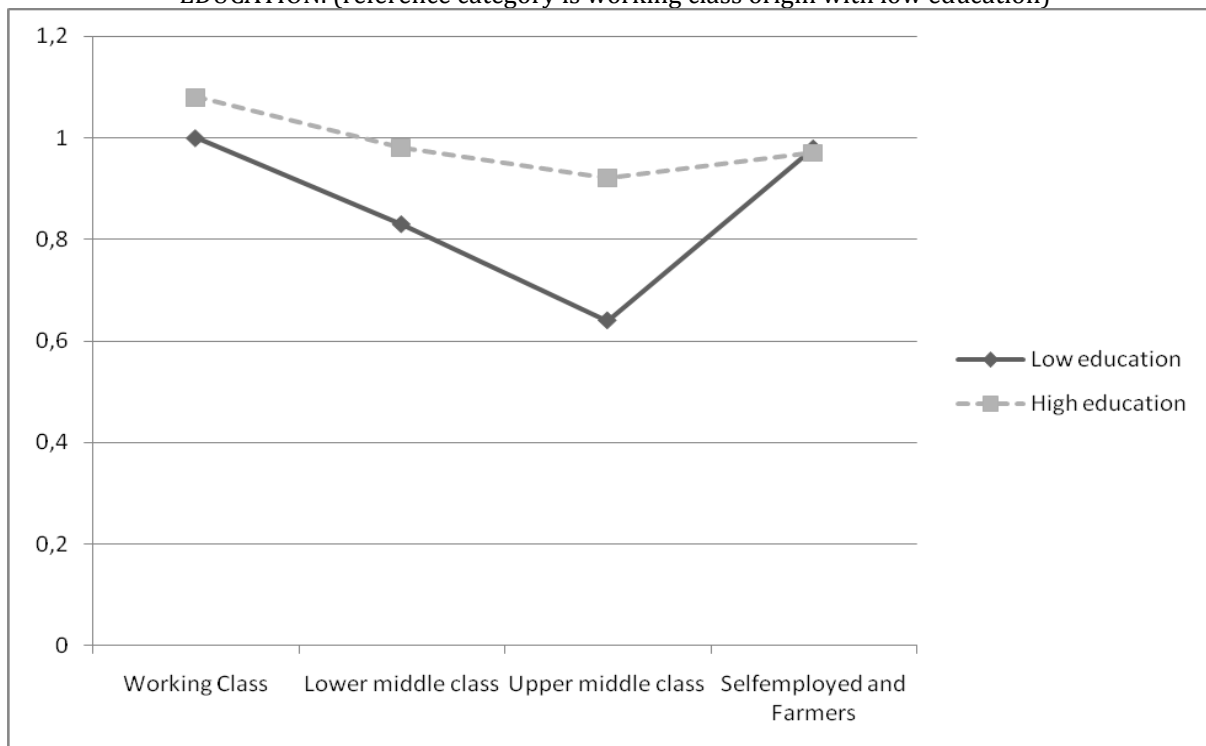
Seen to all four social backgrounds, the propensity to become a parent at comparable ages, sex and cohorts are higher among those with high completed education compared with those with low completed education. In terms of the effect of high education, those with working class background and high education have a 13 percent higher propensity of becoming a parent compared to those with the same working class background but with low education. For those with high education and lower middle class background, the propensity of becoming a parent are 8 percent higher compared to those with same social background but with low education. Lowest impact of high education on the propensity of becoming a parent do we find among those with upper middle class background. High education for those with upper middle class background increases the propensity of becoming a parent with 4 percent compared to those with the same social background but without high education. We can detect a pattern in the effect of high education on the probability of becoming a parent. The impact of higher education appears to decrease with increasing social background. However, we must interpret these findings with great caution because only the relative risk for those with high education and working class or lower middle class background are statistical significant at acceptable levels.

The results of model 3 to 5 also shows that enrollment in education reduces the propensity of becoming a parent for all four group of social background. Strongest effect does the enrollment in education seems to have for those with upper middle class background. Among those with upper middle class background the relative risk of becoming a parent is almost 50 percent lower for those who are currently enrolled in education compared to those who have completed their education. In the other three groups of social background, the propensity of becoming a parent for nearly 40 percent lower for those who are currently enrolled in education compare those who are not

currently enrolled in education. The negative effect on the propensity of becoming a parent seems to be that greater among those with working class background. The relative risk of becoming a parent is almost 50 percent lower for men with working class backgrounds compared with women with the same working class background.

We can also study this effect of social background on the propensity of becoming a parent by including interaction terms of each interaction in the main model. Figure 3 illustrates the results from this model. As we can see high education increases the propensity of becoming a parent for all groups of social background. We can also see that a higher social background decreases the probability of becoming a parent. Both the line that represents those with high educated and the line that represent those with low education have its highest point at the working class and its lowest point at the point of upper middle class background.

FIGURE 3. RELATIV RISKS OF FIRST BIRTH, INTERACTIONS BETWEEN SOCIAL BACKGROUND & EDUCATION. (reference category is working class origin with low education)



As already mentioned, we also carry out separate analysis for men and women (Model 7 and 8 in Table 4). Although not all relative risks differences are significant at conventional levels, these results must be regarded highly interesting. In the main model

(Model 2) in Table 4, we saw that higher education increase the propensity of becoming a parent with 16 percent. The results from the analysis done separately for men and women (Model 7 and 8) shows that higher education seems to have a particularly strong effect on the propensity to become a father. A male with a high education has a 24 percent higher propensity of become a parent compared to those with low education.

However, when we look at the model for women, we see that higher education does not seem to have as strong effect on the propensity to become a mother. High education still increases the propensity of become a parent but not with the same strength as for men. Women with high education have a 14 percent higher relative risk to be mother than women with low education. Thus, these results suggest that higher education have stronger effects for males and females propensity of becoming a parent. Some of these results are consistent with some previous research on ultimate childlessness. SCB (2002a) have shown that high education of women may lead to higher probability of ultimate childlessness. In the main model (Model 2) we saw that high education increased the propensity of becoming a parent by 16 percent compared to the reference category with low education. The difference in relative risk between high and low educated women are very similar to the difference in relative risk between low and high educated in the entire population. This may suggest that one of the other included covariates better capture the differences in the propensity to become a mother.

When we look at the effect of social background on the propensity to become a parent we also see that social background appears to play a greater role for women than men. While there are no significant difference in the propensity of becoming a father for those men with working class background compared to that of those with lower middle class background, we see that women with lower middle class background have a 26 percent lower propensity to become a mother compared with women with working class background. In the separate model for men (Model 7), we see that men with upper middle class background are 24 percent less likely to become a father, compared with men with working class background. The effect of upper middle class background is clearly stronger for women. In the separate model for women (Model 8), we can see that the relative risk of becoming a mother are 35 percent lower for those women who grow up in middle class families compared to women who grow up in a working class family.

The conclusion is that both social background and education have different impact with men's and women's propensity to become a parent. Higher education increases the propensity of becoming a parent for both man and women but the impact of high education seems to be greater for men than women. A higher social background reduces the first birth risk for both men and women, but as well to various degrees. Higher social background seems to effect women more than men.

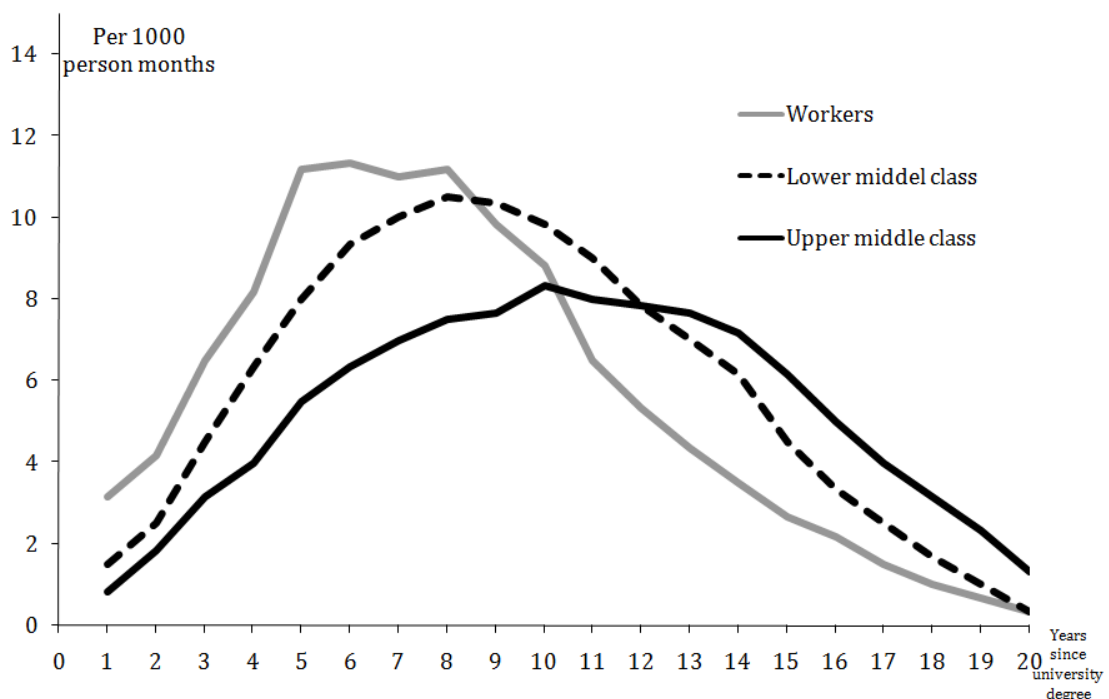
TABLE 4. SUBGROUPS - RELATIVE RISK OF BECOMING PARENT FOR FIRST TIME. BY GENDER.
BIRTH YEAR. EDUCATIONAL LEVEL. EDUCATIONAL ENROLLMENT AND SOCIAL BACKGROUND.

	Model 3 Working class	Model 4 Lower middle class	Model 5 Upper Middle class	Model 6 Self- employed and Farmers	Model 7 Male	Model 8 Female
Covariats						
Gender						
Female (ref.)	1	1	1	1		
Male	0.56***	0.74***	0.66***	0.67***		
Birth year						
1925-29 (ref.)	1	1	1	1	1	1
1930-39	1.48***	0.95	2.32	1.00	1.29*	1.26*
1940-49	1.68***	1.04	1.94	1.19	1.30*	1.55***
1950-59	1.32**	0.86	1.19	0.84	0.97	1.22*
1960-69	1.05	0.77	1.04	0.86	0.88	1.00
1970-81	0.84	0.45***	0.57	0.46**	0.54***	0.70**
Education						
Low education (ref.)	1	1	1	1	1	1**
High education	1.13*	1.08*	1.04	1.03	1.24***	1.14**
Enrolled in education						
No (ref.)	1	1	1	1	1	1
Yes	0.59***	0.58***	0.52***	0.59***	0.65***	0.50***
Social background						
Working class (ref.)					1	1
Lower middle class					0.97	0.74***
Upper middle class					0.76***	0.65***
Self-employed and Farmers					1.06	0.91

Notes: * indicates a p value of less than 5%. ** indicates p value of less than 1% and *** indicates statistically significance with the probability of a random effect lower than 1 per thousand (.000).

Since this study aims to examine differences in the timing of becoming a parent by social background, we should also take a look at the differences in the timing of childbearing since finishing education and not only at the relative risks by social status as done in Table 2. Figure 4 show the first birth intensities (observed births/exposure rate), by time since finishing education for those with university degrees divided by their social background. This bi-variate rate shows the conditional probability that a person will become a parent at a given duration since finishing education, given that he or she wasn't already a parent at the time. As can be seen on the x-axis the time of exposure is time since finishing education. In order to interpret the image correctly, we should take in account that the average age of university degree varies between the different social backgrounds. This is something we can assume being a factor on the time between achieved university degree and first birth. Individuals with a working class background are on average three years older than those with upper middle class background when they complete their university studies. The average age difference between those with working class backgrounds and those with lower middle class background is one year.

FIGURE 4. OBSERVED OCCURRENCE/EXPOSURE RATES OF FIRST BIRTH, BY SOCIAL BACKGROUND. TIME SINCE UNIVERSITY DEGREE.



Individuals whose parents were skilled or unskilled manual workers have their first birth intensities peak 5 years after getting their university degree. The corresponding rate for individuals whose parents were upper middle class is lower for the first eight years and doesn't peak so clearly. During the first nine years after achieving university degrees those whose parents belonged to the working class or lower middle class are significantly more likely to become parents than those whose parents were upper middle class. For those with working class background the rate drops quite rapidly around ten years after graduation and remains low throughout the observed time. Those with lower middle class background have their birth intensity peak similar to those with working class background but doesn't drop as rapid after ten years. Those with upper middle class background have significant lower first birth intensities throughout most of the observed time but a higher rate at the end of the studied period.

SUMMARY AND DISCUSSION

This study shows that there is evidence of an intergenerational effect on fertility through social background. Individuals with working class background become parents earlier than individuals with lower or upper middleclass background. Furthermore, individuals with a working class background have a higher risk of becoming parents even when we control for own adult education. An individual whose parents were labeled working class has a 13 percent higher first birth risk if he or she has a university degree, compared with an individual with the same social background but with low education. For those with middle class background the effect of high education are similar. Individuals with high education whose parents belonged to the lower middle class has almost a 8 percent higher risk of becoming a parent compared to those with the same social background but with Low education. These results suggest an effect of social background that is not only explained by the effect of social mobility.

This study shows no significant differences of high education among those with upper middle class background. To be enrolled in education seems to have the strongest decreasing effect on the risk of becoming a parent among those with upper middle class background. Among those with upper middle class background those currently enrolled

in education have an almost 50 percent lower first birth risk compared to those with the same social background but who's not currently enrolled in education. Among the other groups of social background the propensity of becoming a parent is closer to 40 percent lower for those who are currently enrolled in education compared to those who are not currently enrolled in education.

In this study we also show that the relationship between social background and the propensity of becoming a parent not just works indirectly through different groups educational success. When we control for own social class, in form of own education level, much of the impact of social background on the propensity of becoming a parent remains. Our results undoubtedly show the existence of a significant direct effect of social background on the timing and propensity to become a parent.

We have seen that higher education seems to be followed by a more rapid entrance into parenthood. In terms of time since obtained high education, the risk of becoming a parent is higher among those with working class background compared to those with upper middle class background. The intensity birth rate peaks much more early after completing high education among those with working class background than among those with upper middle class background. If this difference is due to some underlying variation in behavior after graduation, we don't know. Perhaps people of different social backgrounds behave differently when they after finishing education try to establish them self on the labor market.

Although this paper focuses on the net effect of social background on fertility behavior, we may recall that some theories that connected social mobility to fertility behaviors were presented in the theoretical framework. In future research some of these theories may benefit to our understanding of the relationship between family of the origin, family of destination and its impact on fertility behaviors. Although we must be cautious to comment on the effects of social mobility on fertility, it might perhaps be said that our results point in the same direction as the social isolation perspective and the relative economic status perspective. As we saw, both this theoretical perspectives perspective that upward mobile individuals would have higher fertility than non-mobile. Our results show that high education seems to have a greater positive effect on the propensity of

becoming a parent of those with working class background than those with upper middle class background. This result may perhaps be interpreted that those who moved upwards on societies social ladder, have higher fertility rates than those who been non-mobile. What is the effect of destination and what is the effect of the mobility, we don't dare to answer. However, it is clear that future research not only must distinguish between the effects of family of the origin and the family of destination, but also identify the net effect of the social mobility.

Furthermore, this study has not made a distinction between different fields within high education. Previous research has shown that in addition to a bias in recruitment to higher education, there also exists an inequality in the choices of higher education between individuals with different social backgrounds (Jonsson 2001). This could also have an effect on fertility behavior. Hoem et al. (2006) has shown that fertility also varies between different educational fields within the same educational level. Perhaps individuals from different social classes in varying extent apply and get accepted to different educational fields. From previous research (Erikson and Jonsson 1993, Högskoleverket 2002) we know that the recruitment to some prestigious university educations are very skewed in terms of social background. In addition to the possible variation by different educational fields, individuals might also be affected by the different internal levels of higher education. Possibly social background affects individuals differently depending on the type of high education. If individuals with different social backgrounds are educated in different fields of high education, it is not certain end up in the same destination milieu. If highly educated individuals with working class background are educated in a field which follows by a labor market with high job security and where family life is easier to combine with early working career, and were highly educated individuals with upper middle class background are educated in fields were young adults are expect to invest more in their early working careers, the question is if these individuals are affected by the same destination milieu. Also this we leave for future research to study.

This study has also show that both education and social backgrounds have different impact on men's and women's propensity to become a parent. An increase in education raises the propensity of becoming a parent for both men and women, but not to the

same extent. High education has a stronger positive effect on the propensity of becoming a father than on the propensity of becoming a mother. On the other hand, the effect of social background on the propensity of becoming a parent seems to be stronger for women than for men.

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APPENDIX 1

TABLE 5: SUMMARY STATISTICS OF VARIABLES USED IN ANALYSIS OF SOCIAL BACKGROUND, SOCIAL MOBILITY, AND TIMING OF BECOMING A PARENT IN SWEDEN

Covariats	Individuals	Percentage
Gender		
Female	2 432	49.2
Male	2 508	50.8
Birth cohort		
1925-29	259	5.2
1930-39	627	12.7
1940-49	927	18.8
1950-59	898	18.2
1960-69	1 032	20.9
1970-81	1 197	24.2
Educational level (Highest completed)		
Low education	4 354	88.1
High education	586	11.9
Social background		
Working class	2065	41.8
Lower middle class	1375	27.8
Upper middle class	615	12.4
Self-employed and Farmers	859	17.4
Missing	26	0.5