Education and the Formation of New Families:
A Comparative Study of Cohabitation and Nonmarital Fertility in Western Nations

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This paper explores the relationship between education and two important, and related, shifts in family formation in the US and four European countries: rising rates of cohabitation and increased fertility outside of traditional marital unions. For France, the former West Germany, Spain, Norway, and the United States, I examine educational differences in the likelihood of entering a cohabiting first union, and in the relative likelihood of having either a first birth within a cohabiting union or nonunion first birth. I also examine how educational differentials have changed over time. My results indicate that education plays a growing role in the type of first partnership, and remains a strong and possibly increasing important player in the rising proportion of women who bear children within cohabiting unions.

Introduction

Rising rates of cohabitation, nonmarital childbearing, and divorce, and declining rates of marital childbearing have drastically changed the composition of American and European families (Kohler, Billari, and Ortega 2002; Thomson forthcoming; Wu and Wolfe 2001). As women delay marriage, they have increasingly entered into cohabitation prior to or instead of marriage. In the US and Britain, where births outside of any union are common, births in cohabiting unions have risen rapidly and now constitute an important component of recent increases in the total nonmarital birth ratio (Wu, Bumpass, and Musick 2001; Ermisch 2001). Nonmarital births in many European countries, unlike the U.S. and Britain, typically occur within long-term cohabiting unions (Kiernan 2001; Heuveline, Timberlake, and Furstenberg 2003). As Bumpass and Lu (2000) demonstrate for the US and Heuveline and colleagues (2003) find for Europe, these shifts in union formation and childbearing have dramatically altered children's family contexts. Children are not only more likely to live with unmarried parents, but also increasingly likely to live without one of their biological parents.

Despite these dramatic shifts in the partnerships and childbearing, relatively little is known about the characteristics of women most likely to form families outside of traditional marriage, nor the extent to which these characteristics have changed over time. In this paper, I examine the relationship between women's education, union formation, and nonmarital

childbearing in the US, and four European countries (Spain, Norway, France, and Germany). Although initially, no consistent relationship between education and cohabitation appears in these countries, the increased likelihood of entering cohabitation was larger among women at lower levels of educational attainment. A strong negative relationship between educational attainment and cohabiting births persisted across cohorts, and this study provides some evidence that the relationship has grown stronger over time.

Background

In recent decades, men and women in wealthy countries have delayed marriage and have increasingly entered first into informal unions. The increase in nonmarital cohabitation in the US has been quite dramatic: among women ages 19-44, the percentage of women who had ever cohabited rose from 33 percent to 45 percent between 1988-88 and 1995, and by the early 1990s over half of all unions began as cohabitation (Bumpass and Lu 2000). The shift in union formation in Western and Northern Europe has been equally dramatic: among women ages 25-29 in the early 1990s, fewer than 25 percent of women forming first unions entered directly into marriage (Kiernan 2000). Yet, marriage remained the typical first partnership in Southern and Eastern Europe, with 80-90 percent of Italian and Spanish first unions formed through marriage among 25-29 year old women (Kiernan 2000).

Concurrent with rising rates of cohabitation, both nonmarital fertility ratios and births within cohabiting unions have also increased (Thomson forthcoming). By 1999, one-third of all US births were to unmarried women (Wu et al. 2001), and with the rapid rise in cohabitation, by the mid-1990s about two-fifths of nonmarital births were births within cohabiting unions (Bumpass and Lu 2000). Increases in the nonmarital birth ratio for US whites can be attributed

almost entirely to births in cohabiting unions (Bumpass and Raley 1995). However, using decomposition methods, Raley (2001) concludes that the rise in US nonmarital fertility is attributable to increased cohabitation, not to an increasing propensity of cohabiting women to give birth (Raley 2001).

Although the nonmarital birth ratio has also increased across Europe, large differences remain between countries; some countries have experienced extremely low fertility levels, others high rates of nonmarital fertility, and some countries exhibiting both (Kiernan 2001). While the proportion of births outside of marriage rose across Europe between 1960 and 2000, the range in 2000 extended from below 10 percent in the very low-fertility countries of Greece and Italy to over 50 percent in Sweden and Iceland (Thomson forthcoming). Unlike the U.S., however, nonmarital births in Western European countries typically occur within long-term cohabiting unions (Heuveline et al. 2003; Kiernan 2001; Thomson forthcoming). Additional differences between European countries can be found in the likelihood that a cohabiting union will become a legal marriage and in the likelihood that couples will bear children within a cohabiting union (Heuveline and Timberlake 2003). As yet, there is little evidence of a convergence in family formation patterns among European countries (Billari and Wilson 2001).

U.S. researchers have focused on the large differentials by race, education, socio-economic background, in order to describe and potentially explain the rise of cohabiting unions and nonmarital childbearing. Among African-American women, about 70 percent of births in the early 1990s were nonmarital (Wu et al. 2001). Despite rising white nonmarital fertility rates (Smith, Morgan, and Koropeckyj-Cox 1996), white women with Bachelor's degrees still rarely have out-of-wedlock births; about 90 percent of unmarried women in this subgroup are childless (U.S. Census 2001). Four-year college graduates show the smallest increases in cohabitation

(Bumpass and Lu 2000). Although neither male nor female economic potential is associated with entrance into cohabiting unions (Xie, Raymo, Goyette, and Thornton 2003), like entrance into marriage as a whole, cohabiting unions in the U.S. are significantly more likely to end in marriage when men's wages are higher and more likely to end in dissolution for lower income and less skilled women (Manning and Smock 2002; Smock and Manning 1997). Childbearing within cohabiting unions is also negatively associated with women's educational and economic circumstances (Bumpass and Lu 2000).

The comparative literature has focused on describing and explaining differential patterns between countries. Much less is known about differentials within countries in these shifts in union and childbearing behaviors, and in children's chances of living in a single-parent family. In Britain, like the US, births within cohabiting unions and outside of any union are more common among women from lower socioeconomic backgrounds and poorer economic opportunities (Ermisch 2001). In Sweden where nearly everyone cohabits at some point (Heuveline et al. 2003), one study found that more highly educated men and men with higher incomes were less likely to have children within cohabiting unions than men with lower educational attainment or incomes (Bernhardt and Goldscheider 2001).

Kathleen Kiernan (2000, 2001) has conducted the primary studies that systematically examine the relationship between education, union formation, and nonmarital births across Europe. She finds evidence for considerable variation in the relationship between women's education and family formation. She found that the cohabitation was more likely among highly educated women in some countries, less likely in others, and was unrelated in still others (Kiernan 2000). With respect to childbearing, Kiernan (2001) found that in France college-graduates were significantly *less* likely to have a birth outside of any union than those without at

least a high school degree (equivalent), while in Italy college-graduates were significantly *more* likely to have a non-union birth. The probability of marriage formation following a birth in a cohabiting union had a *negative* association with education in Italy and a *positive* association in Sweden (Kiernan 2001).

Although many explanations have been proposed for changes in patterns of family formation, they can be categorized into three main types. The first stresses similar economic changes across countries, focusing on rising economic and educational opportunities for women or declining economic opportunities for men. Because the time spent in school and employment opportunities will be greater for more educated women, economic changes are consistent with a divergence in family structure by education. If the economic fortunes of more and less educated men have increasingly diverged over time (as they have in the U.S.), then family structure differentials should also have grown. Several authors (Rindfuss, Morgan, and Offut 1996; Buchmann 1989)argue that the combination of male economic opportunities and female economic opportunities for women in different positions in the educational structure can in large part explain observed differences in the timing of marriage and fertility in the U.S. (Ellwood and Jencks 2003). Cultural change associated with individualization and secularization is a second frequently proposed explanation (see: van de Kaa 1987). Studies have focused on variation across countries or regions within a country rather than on potential socioeconomic differentials in cultural beliefs. A third set of explanations has focused on welfare regimes and policies that support families of varying composition – contextual conditions that arise in part from long-standing cultural and economic differences between countries.

This paper seeks to extend Kathleen Kiernan's work by testing whether the increases in cohabiting union and births are shared equally across educational groups. I test whether

increases in the likelihood of cohabitation are larger among less well-educated women, and whether the overall concentration in nonmarital childbearing among less well educated women can be found in both nonunion and cohabiting union births.

Data and Methods

Data

I use data from the Fertility and Family Surveys (FFS), surveys usually conducted between 1992 and 1997. For this paper, I use data from the US, Spain, France, Germany, Norway. These countries are chosen to represent a wide range of policy environments as well as fertility and nonmarital fertility levels. I will analyze African-Americans and whites in the US separately because their family formation patterns differ in important ways. Following other researchers, I also analyze the former East and West Germany separately (and here report only the results for the former West Germany).

The main advantage of FFS data is the availability of comparable retrospective fertility and partnership histories for women of childbearing ages in each country. In the results presented here, I define two cohorts (typically those born before and after 1965), and I restrict my analyses to women ages 24 or older at the time of the survey.[1] (See Table 1 for cohort descriptions.) Although younger cohorts will have not yet completed family formation—and thus distinguishing between postponement and births/marriages forgone is problematic—I can compare the younger cohort's union and childbearing behavior before age 30 to older cohorts at similar ages. The primary disadvantage of the FFS is the lack of current data – the data are about 10 years old. However, the FFS remains the best source of comparable family formation data available for a large number of countries and these data encompass a period of significant demographic change and educational change for women.

[1] For Norway, I use age 22. The Norway survey, conducted in 1988-1989, sampled women ages 19, 22, 27, 32, etc. In order to include the most recent data, and to have a large enough sample size, I included 22-year olds.

I use educational attainment at the time of the survey and these models do not include measures of school enrollment. Educational attainment was collected using the ISCED system, and I have collapsed these codes into 3 levels – pre-secondary, high school or secondary graduate, and post-secondary or university education.[2] By restricting the sample to women at least age 24, I generally capture completed education with this measure.

Methods

I first use multiple decrement life tables to estimate the proportion of women entering first unions by type and having nonunion or cohabiting union first births by age 30 (28 in Norway). These estimates are stratified by cohorts and by education. Because many of the women in the later cohort were under age 30 at the time of the survey, the life table estimates represent the proportion of the cohort who would have an event if the union formation and birth rates observed at the time of the survey persist.

In the analyses presented here, I use multinomial logistic regression to estimate discrete-time event history models predicting first union (distinguishing between marriage and cohabitation) and nonmarital first birth (distinguishing between nonunion birth and birth within first cohabiting union) (Allison 2000). My method is modeled on the approached used by Raymo (2003) in a study of the relationship between educational attainment and marriage in Japan. Following his approach, I will estimate interactions between education and cohort, which allows me to test whether cohort differences vary across educational attainment levels (Raymo 2003).

[2] These levels are not directly comparable across countries – the US, for instance, awards high school degrees at an earlier age than most European countries. However, despite important differences in the educational systems of the countries I include in my analysis, by focusing on patterns of change within-countries and on the general hierarchy of educational attainment (more or less), the lack of direct comparability is less important than it might otherwise be.

I created data files containing an observation for each person-year an individual was at risk of the relevant event. I treat marriage and cohabitation as competing risks in the first union models: because women who enter into a cohabiting union are no longer single (and therefore no longer at risk of marrying directly), I censor them in my estimates of marriage transitions at the time of union formation; likewise women who marry directly are no longer considered at risk of cohabitation. In the nonmarital first birth models, I censor observations at the time of a marriage prior to first birth because these women were no longer at risk for a nonmarital birth (Wu 1996). I also censor observations at the time of birth for women who had nonmarital births with indeterminate union status or that occurred subsequent to the dissolution of the first cohabitation.

Results

Descriptive change in union formation and nonmarital births

Table 2 presents life table estimates of union formation and nonmarital childbearing by union type and cohort. As demonstrated in the existing literature, this table depicts the remarkable growth of cohabitation as the context of first union formation and first births.

Except in Spain, between the earlier and later cohorts, cohabiting unions replaced marriage as the most common first union type for unions formed by age 30 in each country. Among US whites, for instance, the proportion of first unions that were consensual unions (rather than legal marriages), increased from less than 40 to over 60 percent. The largest shift can be found in Norway where about two-thirds of women enter into a cohabiting union by age 28. Even in the former West Germany, where union formation occurs relatively late, by age 30, half of women are expected to enter into a cohabiting first union. In Spain, however, direct entrance into marriage remained the primary route for partnership formation, although the percent of women who formed a cohabitating union increased from 7 percent in the earlier

cohort to 17 percent among women born after 1965. The proportion of women entering directly into marriage decreased across all educational groups, while the proportion cohabiting increased (except among West German college-educated women). No systematic relationship between education and union formation appears in either cohort at age 30, although in most countries the increase in cohabitation is somewhat larger among less educated women.

These consensual first unions have become an increasingly important source of nonmarital births in the countries examined here. With the exception of African-Americans, births within these unions (by age 30) increased more rapidly than preunion births. As others have pointed out, important differences remain between these countries in the level of nonmarital childbearing and the degree to which nonmarital births occur within or outside of unions. Nonmarital childbearing, for instance, remains extremely low in the former West Germany and in Spain, while in France and Norway, about a third of all women in later cohort had a nonmarital first birth by age 30. Generally, in both cohorts, women with lower educational attainment were more likely to have either type of nonunion birth by age 30. (Note that the number of nonmarital births in countries like Spain and West Germany, particularly among college-educated women, is quite low, so the estimates of births should be interpreted with some caution.)

First Union Formation

In Table 3, I present results from multinomial logistic models examining the degree to which the cohort change in the type of first union formed vary by women's educational attainment.

The first panel of Table 3 estimates the log-odds of entering into directly into marriage compared to remaining single, while the second panel estimates the likelihood of entering a cohabiting first union. The interactions between cohort and education allow the magnitude and direction of cohort change to vary by education. The main effects of education in these models can be interpreted as educational differences in the likelihood of first union transitions among women in the *earlier cohorts*. The main effect of cohort can be interpreted as the difference in the log-odds of first union formation for women with *secondary degrees* between the two cohorts. The interactions assess the degree to which cohort change varies significantly by educational attainment.

Marital first unions: Across countries, college-educated women show a significantly lower hazard of marrying than women with secondary degrees (the omitted category), while women without secondary degrees are significantly more likely to marry.[3] In Norway, for instance, the likelihood of entering directly into marriage was about 45% lower (=100*exp(-0.58)) for college-educated women than the omitted group.

All five countries show a significant decline in the likelihood of entering a marital first union between the earlier and later cohorts for women with secondary degrees; in other words, the coefficient on cohort is significant and negative across countries. US whites show the least change, with just a one-third drop in the odds of marriage ($0.67 = e^{-0.40}$), while France shows the greatest change, with an 80 percent decrease in the likelihood of marriage between cohorts ($0.17 = e^{-1.76}$). Table 3 also shows an educational gradient in the amount of cohort change. The general pattern, with a few exceptions is that more highly-educated women show larger declines or delays in marriage compared to women with lower educational attainment. In Norway, Spain,

[3] For simplicity, these models do not allow the effect of education to vary by ages. Thus, any catch-up in union formation at older ages by more highly educated women is not captured. In models not shown, I estimated models relaxing this assumption, and found similar results.

France, and Germany, women without high school degrees show significantly smaller declines in the risk of marital first unions compared to high school graduates, although in most cases women without secondary degrees still show a substantial decline in first marriage formation. In France, for instance, the likelihood of marriage by age 30 declined by nearly 70 percent among this group of women ($0.31 = e^{(-1.76+0.58)}$). College-educated women, on other hand, show a larger decrease in the odds of marriage in Norway, Spain, and among US whites. African-Americans, however, experienced similar cohort change regardless of educational attainment, while US whites without high school degrees show a larger decrease in marriage than high school graduates.

Cohabiting first union: Unlike entrance into marital first unions, the second panel of Table 3 shows considerable country-differences in the relationship between education and cohabiting first union *among the earlier cohort.* For US whites, the higher a woman's educational attainment, the lower her likelihood of cohabitation compared to remaining single. In Spain, the relationship is reversed: women without secondary degrees were significantly less likely to cohabit than secondary graduates. Finally, in France and West Germany, the risk of cohabitation in the earlier cohort was unrelated to educational attainment.

Despite these initial differences, the cohort trends indicate important educational differences in the magnitude of increased cohabitation across cohorts. High school graduates typically experienced increasing hazards of cohabiting first unions (except in Spain and the former West Germany), ranging from about a 50 percent increase in the likelihood of cohabitation among African-Americans to over 250 percent increase for Norwegian women. West German women, on the other hand, show a 15 percent decrease, indicating a delay in union formation of all types. College-educated US whites and Norwegians had a significantly smaller

increase in the odds of cohabiting between cohorts compared to high school graduates. Spanish, French, and West German women without high school degrees, showed significantly larger increases in risks of cohabitation compared to high school graduates. Thus, regardless of the initial pattern of educational differences, across countries the trend is toward a more rapid rise in cohabiting unions among less-well educated women compared to women who have accumulated more educational credentials.

In conclusion, despite the increasingly important role of cohabitation as the first union type, educational differences in the timing of first unions have grown regardless of first union type. Delays or declines in the likelihood of marriage, compared to being in no union, are significantly larger among more highly educated women, while increases in the likelihood of cohabitation by age 30 are lower among more highly-educated women.

Union Contexts of Nonmarital First Births

Although cohabitation has increasingly replaced legal marriage as the first union formed by young women across these countries, researchers have demonstrated large differences between and within countries in the likelihood of childbearing within cohabiting unions. Table 4 shows the results from models estimating educational and cohort differences in nonmarital births by type.

The first panel shows the likelihood of a having first birth prior to union formation compared to not having a nonmarital birth, while the second panel shows the likelihood of a cohabiting first birth compared to not having a nonmarital birth. Respondents are censored at the time of marriage or at the time of a nonmarital birth that either follows a first cohabiting union or

where union status cannot be determined. (Generally fewer than 10 percent of nonmarital births fall in this latter group, although this percentage rises to 16-18 percent in the former West Germany and among US whites.)

The top panel of Table 4 shows large educational differences across countries in the likelihood of having a preunion birth or remaining childless and unmarried, as well as in the likelihood a woman will have a cohabiting birth relative to remaining childless and unmarried. In Norway, for instance, women without high school degrees are more than twice as likely to have a preunion birth than women with high school degrees, while college-educated women are two-thirds less likely than high school graduates. In France, compared to high school graduates, women without a secondary degree are about 30% more likely to have a cohabiting birth, while women with postsecondary education are only half as likely.

Between the two cohorts, there is no evidence of any increase in the likelihood of a preunion birth over time for high school graduates (the main effect of cohort, or the differences between cohorts among high school graduates, is never significant). In the former West Germany, the likelihood of a preunion birth for these women significantly declined. On the other hand, younger high school graduates show a significant increase in their likelihood of having a cohabiting birth in all countries except Spain and West Germany.

These models provide little evidence that educational differences in the likelihood of a preunion birth have increased across cohorts. The only interaction approaching significance in the first panel indicates a marginally significant decline in the likelihood of having a preunion birth among women without high school degrees in Norway.[4]

[4] Note, when I disaggregated college attainment in Norway into vocational and non-vocational degrees, the difference between women with non-vocational degrees and high school graduates grew over time and this difference was marginally significant.

The cohabitating first births provide greater evidence of growing educational differences in nonmarital childbearing. Comparing college-educated women with high school graduates, the differences in the likelihood of a birth in a cohabiting first union grew significantly in the US and marginally significantly in France. In addition, in Norway, although the interaction between cohort and college-education does not reach significance in the model shown, when I disaggregated college-education, women with college-educations experienced a smaller increase in cohabiting births than secondary graduates (these differences were marginally significant). In France and the former West Germany, differences between women with and without secondary degrees appear to have increased across cohorts. In Spain, although the results suggest a larger increase in cohabitation among women without secondary degrees, this difference is not significant. (Note however, nonmarital births are extremely rare even among high school graduates in Spain.) Among US whites, however, women without secondary degrees increased their cohabiting births significantly less than women with secondary degrees, leading to an overall narrowing in the differences among women without college degrees.

Stronger evidence for greater cohort change in nonmarital childbearing among less well-educated women can be found when all nonmarital births are combined. In results not shown, I estimated similar models for all nonmarital first births, regardless of type. With the exceptions of African-Americans and Spanish women, I found that significantly larger increases in nonmarital first births among less well-educated women compared women with greater levels of educational attainment. The coefficients for Spain were consistent with the hypothesis of growing educational differentials between cohorts, and nonmarital births to women with secondary degrees or higher in Spain remained extremely rare across cohorts.

These models demonstrate large and, at a minimum, persistent educational differences in nonmarital childbearing across countries. The interactions suggest that these differences may be increasing over cohorts. However, the evidence is fairly weak. Part of this weakness likely reflects the low levels of nonmarital childbearing among college-educated women – only 8 college-educated women in Spain and just 13 in the former West Germany had a preunion birth or a birth in their first cohabiting union. Even in the US, among white 4-year college graduates, only 4 had a first birth within a first cohabiting union.)

Finally, in models not shown, I estimated the likelihood of a nonmarital birth among women in a first cohabiting union. Although I found large educational differences, I found no evidence of any growth in educational differentials across cohorts. In fact, I found little evidence of increasing fertility in cohabiting unions across these countries, a finding consistent with previous US research (Raley 2001). Thus, these results suggests that growing educational differences in the entry into first cohabiting unions combined with persistent educational differentials in the risk of births among women who cohabit largely explains any increasing educational differentials in nonmarital births.

Conclusions

Consistent with previous studies, I find that that cohabitation has become an increasingly important context for women's union formation and first births in these countries. Among women without partners, the likelihood of entering directly into marriage declined between these cohorts, while the likelihood of cohabitation increased. These changes, however, were not shared equally by all women. The initial relationship between education and the likelihood of cohabiting, conditional on being unmarried, varied across countries; yet, between the cohorts,

cohabitation risks increased significantly more among women with lower levels of educational attainment.

Trends in nonmarital births appear to differ by the union contexts of the births. While there was little evidence of any increased likelihood of nonunion births between the cohorts, the likelihood of having a birth within a cohabiting union among childless, unmarried women increased significantly over time. Regardless of the mother's union status, however, greater educational attainment was associated with a lower risk of having a nonmarital birth. These differences persist across cohorts, and there is some evidence that educational differences in the likelihood of giving birth in a cohabiting union may be growing. Preliminary analyses suggests that this is largely the result of the growing educational differences in union formation.

In conclusion, despite the increasingly important role of cohabitation plays in union formation and childbearing across these countries, all women do not equally share this shift. Further research is necessary to understand why these differences have emerged or persisted, and whether they have continued in more recent years.

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Table 1. Sample Characteristics

Country	Survey year	Birth cohorts (earlier; later)	Sample Size
United States	1995	1950-64; 1965-74	7766
Spain	1994-95	1950-64; 1965-74	4021
France	1994	1944-63; 1964-73	2944
West Germany	1992	1952-59; 1960-70	2566
Norway	1988-89	1945, 1950, 1955; 1960, 1965, 1968	4019

Table 2. Life Table Estimates of Proportion of Women with First Unions and Nonmarital Births by Union Status

	US Whites		US Blacks		Norway[5]		Spain		France		West Germany	
	Earlier	Later	Earlier	Later	Earlier	Later	Earlier	Later	Earlier	Later	Earlier	Later
Union Status, age 30												
Any union	0.93	0.90	0.79	0.73	0.95	0.94	0.90	0.79	0.90	0.86	0.88	0.75
First union: marriage	0.58	0.35	0.40	0.18	0.58	0.18	0.82	0.61	0.54	0.34	0.49	0.21
First union: cohabitation	0.35	0.55	0.40	0.55	0.37	0.76	0.07	0.17	0.36	0.53	0.39	0.53
<HS: marriage	0.58	0.27	0.30	0.14	0.61	0.23	0.87	0.72	0.56	0.15	0.57	0.32
HS grads: marriage	0.64	0.39	0.44	0.21	0.62	0.21	0.72	0.57	0.49	0.08	0.44	0.16
College: marriage	0.50	0.35	0.41	0.18	0.59	0.16	0.68	0.40	0.38	0.08	0.35	0.18
<HS: cohabitation	0.40	0.71	0.45	0.61	0.34	0.74	0.05	0.16	0.38	0.77	0.33	0.54
HS grads: cohabitation	0.32	0.57	0.38	0.54	0.31	0.78	0.10	0.19	0.45	0.86	0.46	0.56
College: cohabitation	0.36	0.53	0.38	0.53	0.33	0.76	0.15	0.19	0.53	0.80	0.46	0.42
Nonmarital first birth, age 30												
Before first union	0.06	0.10	0.44	0.51	0.10	0.09	0.03	0.03	0.08	0.08	0.07	0.05
In cohabiting first union	0.02	0.06	0.08	0.08	0.05	0.22	0.01	0.03	0.12	0.37	0.03	0.06
<HS: preunion	0.14	0.25	0.62	0.70	0.21	0.18	0.03	0.05	0.11	0.12	0.11	0.08
HS grads: preunion	0.07	0.13	0.47	0.54	0.11	0.14	0.01	0.01	0.06	0.08	0.05	0.02
College: preunion	0.03	0.06	0.31	0.34	0.04	0.05	0.00	0.00	0.03	0.00	0.01	0.04
<HS: first cohab birth	0.08	0.18	0.11	0.09	0.06	0.30	0.01	0.03	0.14	0.43	0.02	0.07
HS grads: first cohab birth	0.02	0.10	0.07	0.11	0.05	0.26	0.02	0.03	0.13	0.39	0.05	0.06
College: first cohab birth	0.01	0.02	0.07	0.05	0.04	0.18	0.00	0.01	0.08	0.23	0.02	0.04

[5] Age 28 for earlier cohort in Norway

Table 3. Multinomial Logistic Models for First Union Formation

	US Whites			US Blacks			Norway			Spain			France			W. Germany		
Marriage vs. No Union																		
	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p
14-19	-2.81	0.04	***	-3.42	0.09	***	-3.55	0.07	***	-3.93	0.08	***	-3.32	0.07	***	-3.88	0.11	***
20-24	-1.51	0.04	***	-2.59	0.09	***	-1.50	0.06	***	-2.08	0.08	***	-1.88	0.07	***	-2.22	0.09	***
24-29	-1.86	0.07	***	-2.83	0.12	***	-1.74	0.09	***	-1.68	0.08	***	-2.91	0.13	***	-2.63	0.13	***
30-34	-2.40	0.13	***	-3.60	0.21	***	-2.78	0.23	***	-2.59	0.13	***	-4.43	0.36	***	-3.23	0.23	***
35+	-3.29	0.26	***	-4.08	0.36	***	-3.49	0.45	***	-3.97	0.28	***	-6.42	1.00	***			
Later cohort[a]	-0.40	0.09	***	-0.83	0.18	***	-0.80	0.13	***	-0.84	0.13	***	-1.76	0.22	***	-1.40	0.14	***
<HS[b]	0.54	0.08	***	-0.30	0.13	*	0.16	0.09	+	0.48	0.08	***	0.28	0.07	***	0.46	0.11	***
College[b]	-0.62	0.05	***	-0.17	0.10	+	-0.58	0.07	***	-0.22	0.10	*	-0.58	0.11	***	-0.45	0.17	**
Later*<HS	-0.52	0.22	*	0.25	0.32		0.52	0.24	*	0.60	0.14	***	0.58	0.29	*	0.65	0.18	***
Later*College	-0.23	0.12	*	-0.12	0.26		-0.31	0.17	+	-0.46	0.20	*	0.01	0.40		0.42	0.31	
Cohab vs. No Union																		
	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p
14-19	-3.62	0.06	***	-3.63	0.09	***	-4.33	0.08	***	-5.67	0.22	***	-3.56	0.07	***	-3.88	0.10	***
20-24	-2.22	0.06	***	-2.60	0.08	***	-2.31	0.07	***	-4.38	0.21	***	-2.01	0.07	***	-2.27	0.09	***
24-29	-2.28	0.08	***	-2.90	0.11	***	-2.17	0.10	***	-3.77	0.22	***	-2.17	0.09	***	-2.33	0.11	***
30-34	-2.82	0.15	***	-3.12	0.16	***	-2.80	0.21	***	-3.97	0.31	***	-2.84	0.18	***	-2.95	0.21	***
35+	-4.19	0.36	***	-3.68	0.28	***	-3.52	0.42	***	-4.72	0.53	***	-4.03	0.32	***			
Later cohort[a]	0.55	0.09	***	0.37	0.12	**	1.30	0.10	***	0.28	0.26		0.61	0.09	***	-0.17	0.10	+
<HS[b]	0.89	0.09	***	0.20	0.11	+	0.31	0.12	**	-0.40	0.22	+	-0.08	0.08		-0.18	0.12	
College[b]	-0.35	0.06	***	-0.18	0.10	+	-0.09	0.09		0.32	0.24		-0.10	0.09		-0.18	0.16	
Later*<HS	0.02	0.17		-0.02	0.20		0.09	0.18		0.88	0.30	**	0.25	0.14	+	0.52	0.15	***
Later*College	-0.41	0.12	***	-0.22	0.18		-0.51	0.12	***	-0.56	0.35		-0.23	0.15		-0.19	0.22	

[a] Women in the earlier cohort are the omitted category
[b] High school graduates are the comparison group

Table 4. Multinomial Logistic Models for Nonmarital First Births by Union Status

	US Whites			US Blacks			Norway			Spain			France[6]			W. Germany		
Pre-Union Birth vs. No Nonmarital Birth																		
	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p
Intercept	-4.62	0.15	***	-2.58	0.09	***	-4.03	0.14	***	-6.93	0.60	***	-4.71	0.18	***	-5.20	0.30	***
14-19[a]	-0.41	0.14	**	-0.20	0.08	*	-0.83	0.14	***	-0.48	0.26	+	-1.06	0.16	***	-0.58	0.22	**
24-29[a]	-0.41	0.25		-0.67	0.16	***	-0.42	0.26		0.47	0.34		0.15	0.22		-0.77	0.39	*
30+ [a]	-0.76	0.40	+	-1.29	0.27	***	-0.53	0.40		0.09	0.54		-0.01	0.28		-0.39	0.48	
<HS[b]	1.20	0.18	***	0.65	0.11	***	0.84	0.17	***	1.27	0.60	*	0.88	0.19	***	0.90	0.32	***
College[b]	-1.13	0.18	***	-0.71	0.11	***	-1.04	0.21	***	-0.67	0.91		-1.12	0.35	**	-0.50	0.57	
Later cohort[c]	0.25	0.22		-0.04	0.13		0.14	0.20		0.01	0.92		-0.07	0.27		-0.91	0.40	*
Later cohort*<HS	0.19	0.32		0.22	0.19		-0.64	0.36	+	0.41	0.95		0.07	0.34		0.51	0.47	
Later cohort*Coll	0.35	0.31		0.27	0.19		-0.42	0.33		-0.28	1.53		----	----		0.71	0.86	
Birth in First Cohabiting Union vs. No Nonmarital Birth																		
	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p
Intercept	-5.44	0.23	***	-3.77	0.19	***	-4.49	0.17	***	-6.81	0.53	***	-3.84	0.12	***	-5.29	0.32	***
14-19 [a]	-1.27	0.20	***	-1.75	0.20	***	-2.30	0.18	***	-1.29	0.50	*	-1.88	0.13	***	-2.17	0.45	***
24-29 [a]	0.10	0.27		-0.81	0.29	**	0.50	0.15	**	1.53	0.38	***	0.74	0.12	***	0.75	0.26	**
30+ [a]	-0.65	0.53		-1.21	0.43	**	0.42	0.32		1.22	0.55	*	0.68	0.16	***	0.41	0.46	
<HS[b]	1.84	0.28	***	0.90	0.26	***	0.33	0.29		-0.10	0.51		0.28	0.13	*	-0.52	0.45	
College[b]	-1.08	0.30	***	-0.44	0.24	+	-0.60	0.23	*	-0.83	0.73		-0.77	0.18	***	-0.45	0.53	
Later cohort[c]	1.44	0.28	***	0.53	0.27	+	1.60	0.21	***	0.11	0.74		0.68	0.15	***	-0.33	0.36	
Later cohort*<HS	-0.82	0.42	+	-0.44	0.46		0.17	0.37		0.79	0.83		0.54	0.20	+	1.27	0.55	*
Later cohort*Coll	-1.16	0.49	*	-0.95	0.46	*	-0.41	0.28		0.08	1.17		-0.59	0.32	+	-0.45	0.91	

[6] The interaction between cohort and education could not be estimated for college-educated French women because there were no preunion births to the women in the later cohort.

[a] Comparison group consists of women ages 20-24

[b] HS graduates are omitted category

[c] Women in the earlier cohort are the omitted category