

DETERMINANTS OF WOMEN'S FIRST UNION FORMATION IN THE UNITED STATES, CANADA, AND SWEDEN*

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ABSTRACT

Retrospective survey data are combined with aggregate data on economic conditions to estimate changes over the past 30 years in the effects of women's education on transitions to first union (distinguishing the competing risks of marriage and cohabitation) in the US, Canada, and Sweden. We find that the circumstances affecting union entry among those born prior to 1950 and entering unions during the 1960s and 1970s were quite different from those influencing cohorts coming of age later in the 20th century in all three countries. Further, economic conditions *played/did not play*¹ a role in these changes. More highly educated American and Canadian women became increasingly more likely to marry than to remain outside a union, compared with less educated women, controlling for background characteristics and current activities. Sweden shows a curvilinear pattern linking educational attainment and marriage, with both the least and most educated more likely to marry, although this pattern attenuated among younger cohorts in Sweden.

In each country, cohabitation became less positively (Sweden and Canada) or more negatively selected (US), suggesting that this rapidly growing union form is no longer only appealing to women with more options to support themselves (and perhaps greater worth in the partnership market). We interpret our results as indicating that not only is it important for the study of union formation to compare processes between countries, at both the aggregate and individual levels, but also over time.

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THE EFFECT OF ECONOMIC CONDITIONS ON THE CHANGING DETERMINANTS OF WOMEN'S FIRST UNION FORMATION IN THE UNITED STATES, CANADA, AND SWEDEN

INTRODUCTION

There have been great changes in family patterns throughout the industrialized world during the last half of the twentieth century (van de Kaa 1987). Perhaps the most dramatic element of this "second demographic transition" is the growth in nonmarital cohabitation. Together with the rise in divorce among the married, the growth in cohabitation appears to mean that marriage is fast becoming not only a less stable institution but also a less central one in the lives of women (and men). Women's roles outside the family have also changed dramatically, more than they have changed inside the family (Spain and Bianchi 1996).

In this context, it is not surprising that our theories of family life are being challenged. What are the connections among these new trends, if any? Has the rise in female employment provided women the independence to avoid family roles, either by not entering them or leaving them voluntarily, or both? This is the "independence hypothesis," the "persuasive correlation" among trends (Cherlin 1996), which leans heavily on the theories of Gary Becker (1991). Based primarily on analyses of 1980s US survey data, many leading family demographers disagree. (See in particular, Oppenheimer 1995, 1997.) A series of studies at different times and different places have produced results that are consistent with this hypothesis, while the results of other studies are not. These studies, however, normally have used different methods and models, as well as data collected in different ways, and have not always studied the same transitions. The purpose of this paper is to look at the factors influencing union formation and to examine whether and if so how the effects of some of these factors have changed between the 1960s and the early 1990s. We consider three industrialized countries, the United States, Canada, and Sweden, and focus particularly on

hypothesis. We take an additional step by considering whether the differences we observe over time are related to the changing economic status of young men and women (*work not yet completed*).

BACKGROUND

Recent studies both in North America and Europe have demonstrated rapid change in union formation. The risks of cohabiting outside marriage increase from older cohorts to younger ones and the risks of marriage go in the opposite direction (Bumpass, Cherlin, and Sweet 1991; Manning and Smock 1995; Desrosiers and Le Bourdais 1993; Burch and Madan 1986). Many of these countries are quite similar in many respects, particularly Canada and the US. Nevertheless, while change in Canada once appeared to lag change in the United States, Canada has recently leaped ahead on some dimensions (Le Bourdais and Marcil-Gratton 1994). It appears that the growth in cohabitation has been one of the most rapid in the industrialized countries (Klijzing and Macura 1997), particularly in Quebec. Non-marital cohabitation is anything but rare in Sweden. The prevalence of non-marital cohabitations in Sweden is still considered the highest in industrialized countries. Non-marital cohabitation has been popular for several decades. Results from the 1992 Swedish Family Survey showed that the proportion of women who had ever cohabited by age 25 has been stable at around 80% for women born in the late 1940s, the 1950s and the 1960s (Bracher and Santow 1998). Furthermore, the vast majority of young Swedish men and women have chosen cohabitation over marriage as their first form of union, and cohabitation has also become an alternative for childbearing and raising children (Duvander 1998).

This raises the question: how should these changes in union formation be interpreted? What theories are available to account for them? The theory of union formation which is most generally cited is by the Nobel Prize winning economist of the family, Gary Becker (1991).

centrality of a strong division of labor between married men and women. Using the model of international trade, Becker views marriage primarily as valuable insofar as it is efficient, and theorizes that it is most efficient when the partners specialize either in home or non-home production, producing “gains to trade.” Decreased specialization, such as occurs when women also work and/or men also care for children, reduces these gains and, argues Becker, should lead to delayed or even non-marriage, as well as to increased risk of divorce.

Not all agree with Becker, seeing highly specialized marriages as having difficulty dealing with risks, such as unemployment or illness (Oppenheimer 1994) and as unlikely to provide as much companionship as unions with more shared experiences in the workplace and activities in the home (Goldscheider and Waite 1991). Nevertheless, the conjunction of increased female employment and reduced marriage has made Becker’s theory seem intuitively obvious to many.

A related version of Becker’s theory, which derives from an earlier analysis of Becker’s (1973, 1974), is one of the first to use the term “independence hypothesis” (Ross and Sawhill 1976). This theory posits that the ability to support themselves frees women from entering or remaining in undesirable marriages. Scholars invoking this theory usually fail to include the “undesirable” concept and assume either that marriage, per se, is necessarily undesirable to women or that there is nothing men are likely to do to make marriage more desirable. They also usually fail to include Ross and Sawhill’s further derivation that suggests a compensating effect of women’s employment; i.e., that increases in women’s earnings also have an “income effect,” making marriages both more feasible and more stable.

Becker has been widely cited by those who postulate a causal link between the increase in women’s economic independence and the retreat from family over the past 30 years, although many studies have found no evidence for such an effect at the individual level

study of the rise in divorce over the past century in the United States has suggested a strong (if likely declining) relationship between divorce and female employment (Ruggles 1997). These inconsistencies might occur if the processes influencing women's family transitions have been *changing*. Becker (and Parsons) may have been "right" for the period of the 1950s and before, but have become increasingly "wrong" as the revolution in family patterns progressed over the second half of the 20th century and spread across Europe and the other industrialized countries.

A recent set of studies suggests the synthesis we propose to test. Data for Italy, Sweden, and (the former west) Germany were analyzed comparatively on the question: what is the effect of female education on marital dissolution, and does the effect vary between countries? The results indicated that although the effect in each case was positive (as in the historical US), the strength of the effect was much greater in Italy than in Germany, which in turn showed a stronger effect than in Sweden (Blossfeld, et al. 1995). A more detailed study for Sweden similarly showed that the effects of female education on union dissolution have diminished over time in that country (Hoem 1995). These results suggest that the revolution in women's economic roles, which has been in process in each of these countries, may have had destabilizing effects, but some new pattern might be emerging, in which the growth of egalitarian marriage has changed the bargain between men and women in families. Each country may follow similar trajectories as it passes through this transition, but that likely distinctive factors at the country level, reflecting specific histories, cultures, politics, and economies, could affect the speed and levels attained. We begin our test of this hypothesis with analyses of change in union formation in the United States, Canada, and Sweden.

Of possibly critical importance is the fact that most previous studies of the independence hypothesis have only examined marriage transitions, although during this period

have changed the negotiations underlying the dynamics of union formation, as men, women, or both consider the relative advantages of commitment versus flexibility. To study this possibility properly in all its complexities, however, one needs to analyze data that span the range of cohorts who experienced the second demographic transition within a single country, since the trajectory of cohabitation—which groups started the expansion, and how it spread to other social groups—has varied among countries (Toulemon 1995).

It is also the case that the decision to form a union is normally complex, and might be influenced by many factors other than women's independence. Hence, in addition to measures of cohort (to index historical change) and educational attainment and employment (to index resources), we include several factors that have been shown to be of theoretical and substantive importance in past studies. School enrollment normally has been a strong impediment to any kind of union, with effects that are generally stronger for women than for men (Blom 1994; Goldscheider and Waite 1991). It is also important to control for whether the woman is pregnant or already has children. An earlier generation of studies of marriage (e.g., Chiswick and Lehrer, 1990; Koo et al., 1986; Teachman and Heckert, 1985) showed that the presence and sometimes the number of children reduce women's likelihood of marrying, with effects depending on the ages of the children and the mother. More recently, a study that introduced the possibility of cohabitation showed that having a child before a union decreases the risks of getting married but seems to increase the risks of choosing cohabitation (Bennett, Bloom and Miller, 1995), suggesting that children reduce the extent of men's commitment to the relationship.

In addition, studies of change in the union formation process have not taken the changing economic context facing young persons into account. Studies of cross-sections and single cohorts have revealed a strong effect of economic context, in which aggregate measures

likelihood of being married or marrying (Fossett, and Kiecolt 1991; Lichter et al., 1991; Lewis and Oppenheimer 2000) and measures of economic independence among young women has reduced young men's likelihood of entering a marital union (Lloyd and South 1995). The economic prospects of young men and women have shifted substantially over the period in question in these countries, in somewhat different ways (DESCRIBE). We will examine whether these external factors have shaped the patterns we have observed.

Preferences, based in values and experience, also shape family formation. We expect that people who never go to church are more likely to form a cohabitation. Those who attend weekly should be more likely to marry, based on the greater familism and conventionality of the more religiously involved (Goldscheider and Goldscheider 1993; Thornton and Camburn 1987). Non-traditional family situations experienced during childhood or adolescence are also likely to have an influence on one's subsequent conjugal behaviors. Several studies have shown that young persons who experienced the dissolution of their parents' union are more likely to opt for cohabitation as their first form of union (Furstenberg and Teitler 1994; Thornton 1991; Bumpass, Sweet and Cherlin 1989). In addition, young persons who have experienced the separation of their parents tend to leave the family home earlier, and they more often establish a non-traditional family (Goldscheider and Goldscheider 1994; Le Bourdais, Lapierre-Adamcyk and Lehrhaupt 1995). The effects of parental structure have normally been found to be stronger than those of sibling structure, although some studies have found that having more siblings increases the likelihood of marriage and parenthood (e.g., Michael and Tuma 1985).

Like many countries, the United States, Canada, and Sweden are strongly heterogeneous, each with different types of cleavage. In Canada, such differences overlap geographic, linguistic, and cultural dimensions. The United States is more homogeneous

regionally, with a strong north-south gradient.

Canada and the United States have received a large proportion of immigrants during most of their histories; Sweden has only recently become major receiving countries. More than 10% of Swedes in this sample are not Swedish born. Minority groups in Sweden are disproportionately immigrants from non-Nordic countries, many from Eastern Europe, but with substantial numbers also from the less industrialized countries of the Middle East, Asia, Africa, and Latin America (Fassmann and Münz 1992). We distinguish immigrants between those from other Nordic countries and those from non-Nordic countries.

We include indicators of region of residence for all countries except Sweden (a variable on community size will be added eventually), and native birth for the United States, Canada, and Sweden. For the US, we add a measure of ethnicity and for Canada, one of mother tongue.

We realize that there are many pitfalls to comparative research. Even countries that are very similar in some respects can be very different. Although France and Great Britain resemble each other closely on many demographic indicators of early family formation (total fertility rate, proportion of extra-marital births and divorce rate), a recent study has argued that they are different in that 1) the decline in couple formation in France has been more completely balanced by cohabitation than in Great Britain, and 2) in Great Britain, fertility is more concentrated among the very young with the result that unmarried fertility is more likely outside unions in Great Britain, and in cohabitational unions in France (Lelièvre 1995). We see this not as an argument against comparative research, however, but rather one for careful comparative research.

DATA, MEASURES AND METHODS

Data for the United States and Canada are drawn from 1995 surveys: the US

approximately 10,000 women in the childbearing ages, and the Canadian General Social Survey (GSS), which is also nationally representative, and included approximately 5,000 women of those ages. Data for Sweden are taken from the 1992 Swedish Family Survey, again a nationally representative sample of 3,300 women from birth cohorts 1949, 1954, 1959, 1964 and 1969. Women in all surveys reported full conjugal histories (all marital and non-marital unions), providing information on their children and families of origin, as well as on a broad range of background characteristics.

Measures

The analysis reported here uses measures of both stable and time-varying respondent characteristics and activities. Given our focus on change, we highlight differences in the union formation process for respondents of different ages, who entered the ages of first union formation in different decades, considering most carefully the changing effects of measures of educational attainment, our indicator for the independence hypothesis. We also include as control variables time-varying indicators of main activities at the time union formation is being contemplated (work and school), and presence of children. Time-constant indicators include a measure of religious practice, family structure prior to age 15, number of siblings, region of residence, and in-country birth for the United States and Canada, and a measure of language use (French versus English) for Canada and of ethnicity (Black, Hispanic, and non-Hispanic white) for the US. Table 1 presents the means or proportions on each variable for the three countries, separately for women who entered marital and cohabiting unions (calculated as of the period immediately prior to union entry), and for those who had not entered a union at the time of the survey.

We examine historical change via the lives of four birth cohorts. The oldest are those born in 1950 or earlier, most of whom entered their first unions at a time when cohabitation was nearly non-existent in each country. Our central cohorts are those born in the 1950s (1951-60) and the 1960s (1961-70), most of whom had the opportunity to enter some form

time of the survey. We include as well those born between 1971 and 1980, in order to provide information on current union formation dynamics among relatively young people (aged 16 to 24). This is an incomplete cohort, because the youngest members could only provide information about their teenage years. Since their presence could distort conclusions in the analysis, we have examined our models excluding this cohort, and results are robust.

We use the level of the respondent's education as an approximate measure of human capital. This is the most common approach to testing the independence hypothesis, which depends on the ability to be independent rather than on current earnings, which might be depressed or inflated as a result of issues related to union status (Johnson and Skinner 1986).

The data on educational attainment, together with an assumption of normal progress, allow us to estimate both whether a woman has attained a given level of education at a given age and whether she is in school at that age, as one indicator of current activity.² Because the educational systems of the three countries differ, we coded the educational categories somewhat differently. In all countries, we grouped those who did not complete high school (about 30% in each case) as the lowest category. High school ends after 11th grade in Quebec and post-secondary education continues to community college for 2-3 years before university; in other provinces, high school ends after 12th or 13th grade in most Canadian provinces. Hence, we have included those who attended "college" with those who only completed high school in Canada. The highest level in Canada is those who attended a university; in the other three countries it is those who obtained some education beyond high school. In Sweden, the International Standard Classification of Education was used as a basis to generate the variable for our models.

Data from questions on the start of employment and work interruptions history were used to indicate the years the respondent was employed. In combination, this information allowed us to distinguish those who were in school but not employed, employed but not in school, both in school and employed, and neither in school nor employed.

To test for the effects of the presence of children on union formation, we used

(e.g., from childless to mother) on the risks of forming a first union is observed only once it changes the person's characteristics. The date of birth of children reported by the respondent was used to determine when the value for the presence of children had to be changed. The value changed from "childless" to "conception" eight months before the reported date of birth, and changed to "birth" at the birth date. Because the period at risk in our models always ends with a first union, age 35, or the date of the survey, whichever came first, only conceptions or births that come before the beginning of the first union are considered here.

Religious practice (church attendance) is used rather than religious affiliation.

Religious practice seems to provide a better indication of those beliefs that are likely to influence an individual's behavior, although some of the relationship we observe between religiosity and union formation may be a result of the behavior rather than the beliefs (Axinn and Thornton 1992). Religious practice is measured by the number of times a person attends religious services other than weddings, baptisms or funerals, and is not available in time-varying form. The US measure is at age 14, when people started to be exposed to the risks of entering a first union. In Sweden and Canada, it is the current religious practice (the year prior to the survey), although in later work we will use instead the religiosity of the respondent's parents.

Our two measures of family background are childhood family structure and the number of siblings. The union formation patterns of both those who lived in a step-family at some time before the age of 15 (United States and Canada) and those who lived in a lone-parent family in each country will be compared to those who only experienced a stable two-parent family in their childhood.³ The number of siblings is measured in exact intervals, in order to see whether the effects of having no or few siblings differ from those of having several or many.

For Canada, we interact language and province. Cohabitation is much more prevalent in Quebec and it is reasonable to believe that this greater propensity has more to do with cultural traits than with the mere fact of living in that province. Hence, the use of the

mother-tongue group in Quebec.⁴ We treat region and ethnicity additively for the United States.

As may be seen, the characteristics analyzed in the models reflect as much as possible the situation of the respondents at the point when they were exposed to the risks of entering into a first union. However, in the absence of further information, the region of residence is the one reported at the time of the survey, and for Sweden and Canada, church attendance is as reported for the year preceding the survey.

Methods

We use continuous time event history analysis techniques (Allison 1995). General proportional hazard (Cox) models are used to assess the effect of factors influencing the hazard of entering a cohabiting or marital union. The model is generally described as:

$$h(t) = \lambda_0(t) e^{\beta x}$$

where $\lambda_0(t)$ is a baseline hazard function that is left unspecified, and $e^{\beta x}$ is a vector of explanatory variables which is exponentiated.

The use of the Cox model allows us not to specify the hazard function, the relationship between the hazard rate and the duration of risk exposure, which is often difficult to specify at the outset. It implies that the duration of exposure has the same effect on each person (the proportionality assumption), meaning that the probability of experiencing the event studied varies over time in the same way for each person. Only the baseline hazard rate varies from one person to another, depending on each person's characteristics. In addition, it allows for the modeling of variables that have values which change over time. We present the results as risk ratios, which represent the relative likelihood of someone with the specific characteristic of entering a union in comparison to someone who would be in the appropriate reference group.

Separate models are built for entry into first cohabitation and entry into first marriage.

these union forms, the respondent is censored and no longer observed. The underlying assumption with this kind of reasoning is that distinct mechanisms affect the occurrence and timing of each event (Allison 1995). In our models, people are at risk of entering a first union between the ages of 15 and 35; they are censored as soon as they experience a first union, at age 35, or the survey date, whichever occurred sooner. The risks of experiencing a first union were measured to each tenth of a year of the risk exposure period.

We also model the three countries separately. This allows us to focus directly on factors important to each country. We first present the results for all the determinants of first union entry in the US, Canada, and Sweden for the period as a whole. We then examine change, focusing on the evolution of the effects of women's educational attainment. We ask the following question: Does educational attainment exert the same influence on entering a cohabiting or a marital union for each generation? To answer these questions, we include in our final models interaction terms between birth cohort and educational attainment.

THE DETERMINANTS OF UNION FORMATION—ALL COHORTS

We present the basic results for the analysis of the determinants of union entry in Table 2. They demonstrate a rich set of effects, reflecting differences by birth cohort, employment and education, religion and family background, as well as by indicators of heterogeneity. These results closely parallel previous research on women from these countries in most respects; however, some do not.

Consistent with other studies, our results show that the likelihood of entering a cohabitation as a way to begin the first union has increased significantly among younger birth cohorts in all countries, and the likelihood of entering a marriage has declined. The growth in cohabitation was most rapid in Canada and relatively slow in Sweden, mainly because even the oldest women in our sample (born in 1949) had a high propensity to choose cohabitation as their first union. Net of the effects of other determinants, the risks of cohabiting nearly

before (a risk ratio of 0.54). This risk increased by a factor of ten among Canadian women for the same cohorts (a risk ratio of .10).

During the same period, the likelihood of marrying fell by about half among American, Canadian and Swedish women (risk ratios between 1.9 and 2.1 for the earlier cohort relative to the later one). For the two most recent cohorts, cohabitation continued to increase and marriage to decline. Again there are differences, however, with a greater decline in marriage despite a smaller increase in cohabitation among Canadian than American women.

The Overall Effects of Educational Attainment

Turning to educational attainment, we see few results supporting the independence hypothesis. When the competing risk of entering a cohabitation is controlled, in the United States, more educated women are more, not less likely to marry than less educated women. The more educated are 51% more likely to marry than the reference group of high school graduates, whereas those who did not finish high school are only 82% as likely to marry than the reference group. Both less and more educated Swedish women are more likely to marry: around 40% more likely than those with the equivalent to a high school diploma. There are no significant effects of education on union entry in Canada, at least on average for the period as a whole.

Turning to cohabitation, there is little difference by education in the United States and Canada, but a clear increase with education in Sweden. In Canada, there is some tendency for cohabitation to increase with education (although neither of the coefficients is even marginally significant), while in the United States, there appears to be a weak curvilinear relationship. American women with the least and the most education were more likely to cohabit than the perhaps more conservative group with only a high school education. Results for Sweden support a recent study showing that educational attainment increases the women'

however, these weak patterns represent rapidly changing underlying relationships. After reviewing the other overall effects of the factors in this model, we will consider more directly what the effects of education are on union entry for each cohort.

Current Activities, Children, Background Characteristics, and Religiosity

School enrollment was a major deterrent to entering either type of union in all countries, although only significantly for cohabitation in Sweden, and somewhat more for cohabitation than for marriage in the United States and Canada. Enrollment has somewhat stronger effects in the United States than in Canada or Sweden. American women going to school (and not working) are only 27% as likely to marry as those working, compared with Canada, where students are more than half as likely (53%) to marry as those working full time. In Sweden, school enrolment appears to have no effect on marrying. Female students' relative risks of entering a cohabiting union are 20% in the US, 39% in Canada, and 50% in Sweden, relative to employed women in those countries.

The stronger effect of school enrollment on union entry among American women appears again when school attendance is tested in combination with employment. In the US, such women are nearly as unlikely to enter a union as those who are in school but not working. In both Canada and Sweden, however, such women more closely resemble those who are working but not in school.

Differences among the three countries can also be found in the likelihood of marriage among women who were neither employed nor in school. In each country, especially in Sweden and to a lesser extent in Canada, this signals increased likelihood of marriage (and for Canada and the US, decreased likelihood of cohabitation). This result is consistent with other research showing a stronger division of labor vis a vis employment in marital than in cohabiting unions (Henkens, et al. 1993). This interpretation would suggest that marital

Canadian marital unions over this period. The particularly strong effect in Sweden (women who are neither working nor in school being more than three times more likely to marry than working women) also suggests the very select nature of direct marriage in Sweden.

A child, either impending or already born, always increases the likelihood of entry into both types of union in all three countries. The effects of a conception are stronger, and increase the likelihood of entering a marriage more strongly than of entering a cohabitation in all countries; otherwise, there are several differences. Children already born increase the likelihood of marriage and cohabitation in each of the three countries, with the relative risks of cohabitation being higher than for marriage in the United States, but not in Canada or Sweden. The effects of an impending child are similar in the United States, Canada and Sweden, with the likelihood of entering a cohabiting union higher in the latter country. In each country, however, pregnant women are more likely to marry than to cohabit.

The marital behavior of parents exerts an important influence on the type of first union that their daughters will later experience, with somewhat stronger effects on cohabitation than on marriage in all countries except Sweden. Women of the three countries who grew up in a stable, two-parent family are significantly less likely to enter a cohabiting union than are their counterparts who did not. Swedish women who experienced life in a non-traditional family while growing up are also considerably less likely to marry. This suggests that, for Swedish women in our sample, parental breakdown was as much a deterrent to marriage as it was an incentive to cohabitation.

The number of siblings has little impact on the risks of entering a first union, legal or otherwise, except for first marriages in Sweden. In that country, the small number (16%) of women with four or more siblings are more likely to marry. In the United States, those from

one; in Canada only children are less likely to cohabit, but no other patterns emerge clearly.

People who do not attend church are the more likely to cohabit and less likely to marry in each country. Similarly, the most religious on this measure are less likely to cohabit and generally more likely to marry, with much stronger effects in Sweden. The most religious Swedish women are more than twice as likely to marry than those who attend church on an irregular basis. The effect of frequent church attendance on deterring cohabitation appears to be considerably stronger in Sweden than in the United States, reducing the odds of entering a cohabiting union to about 40% for the sporadic attenders in Sweden (50% in Canada), compared with a reduction to only 80% in the US. This suggests a stronger connection between religious and family traditionalism in Sweden than in the United States.

Immigrants to Canada and the United States differ both from the native populations and between countries. In Canada, immigrants are less likely to enter a cohabiting union but not more or less likely to marry than are the native born. In the United States, immigrants are also more likely to avoid cohabitation than marriage, but are actually more likely to marry than the native born. It is clear that understanding this difference between immigrants to the two countries requires further research, since it might reflect differences in the composition of immigrant streams, or differences in opportunities for immigrants once in Canada. There are both regional and ethnic/linguistic differences in the United States and Canada. These have been well described in other research (Turcotte and Belanger, 1997; cites needed for US).

THE CHANGING EFFECT OF EDUCATIONAL ATTAINMENT

In this section, we examine changes in the process of first union formation, focusing on the changing effects of educational attainment. Table 6 presents the pattern of change in the effects of educational attainment on the probability that American, Canadian and Swedish women enter cohabiting or marital unions. Change is tested by looking at interaction effects

of educational attainment for each of the four cohorts. As before, these are presented as relative risk ratios, but this time we focus on the three educational levels within each birth cohort. (The intermediate level of education in each cohort is the reference category.) Our emphasis is on whether and if so, how, the effects of education change relative to each other, so that the coefficients show the effect of combining the coefficients for education and the interaction coefficients of education and cohort. This allows us to follow the trends over time in the effects of educational attainment on union formation. In each of these analyses, the effects of the other explanatory variables have been controlled.

We focus our attention on contrasts between the two middle cohorts. We present results for the oldest cohort, to show consistency of pattern, although there are few cases of American women, since the NSFG has an upper age limit, unlike the Canadian GSS. We omit the youngest cohort, among whom those in the highest educational category have had almost no time to enter unions in the US and Canada, and for which we have no cases for Sweden.

In general, the results show large changes or even reversals in the effects of educational attainment on both marriage and cohabitation for all three countries. For Canada, this shift moves the pattern away from the sort of pattern that would indicate an independence effect to followers of Becker. Among the oldest cohort, the least educated were the most likely to marry and the least likely to cohabit; these effects had reversed (in the case of marriage) or at least attenuated (the case of cohabitation) among the youngest cohort.

The U.S. pattern provides little support for an independence effect for any cohort, and for Swedish women higher education does not seem to be associated with a depressed likelihood of getting married relative to those with intermediate educational levels. Swedish college women born in 1949 were actually significantly more likely to marry than high school graduates (which was also the case for the least educated).

pattern that was already clear in the United States for the oldest cohort, but continued to intensify among successively younger cohorts, increasing the similarity between the two countries in recent cohorts.

The patterns, not surprisingly, are quite different for marriage and cohabitation, and tell the most compelling story for Canada. Among Canadian women in the oldest cohort, increases in education reduced women's likelihood of marriage; by the youngest cohort, the opposite relationship was evident. The education gradient for the oldest cohort was not sharp, with odds of marrying about the same for the two lower educational groups (1.01 relative to 1.00) and somewhat lower for the highest group (.88 relative to 1.00). Perhaps in the decades before the 1970s, before the period when most of the women in our earliest cohort were considering marriage, it was sharper and hence more Beckerian, but this cannot be observed in these data. By the reference cohort, however, women born between 1961 and 1970, most of whom were contemplating marriage during the late 1980s, there was a clear positive relationship between education and marriage risk. The relative effect of having a low education had dropped to .60, significantly lower than the two older cohorts.

There was little difference between women with medium and high education throughout the period in the likelihood of marriage. The "action" was occurring between the two lower groups. This suggests that low human capital, and hence the likelihood of low earning power, became increasingly a deterrent to marriage, as young men came to expect their partners to share in the economic support of a family. High education, and hence the potential for high earnings, however, has not yet become a favorable factor in the Canadian marriage market.

In the United States, in contrast, high education increased women's odds of marrying, even for the oldest cohort. The effect of increases in education, comparing both low with

sharper in the United States than in Canada, and there was a significant increase in slope between the 1951-60 and the 1961-70 cohorts, suggesting that the effect of education on marriage has become increasingly positive, as it has in Canada. Hence, even among the small numbers of women in the NSFG born before 1951, the independence effect did not clearly hold for women's transition to first marriage, controlling for the competing risk of entry into cohabitation and the other factors in the model.

In Sweden, the likelihood of getting married went down for women of all levels, but even more so for the more educated (data not shown). Changing patterns for cohabitation in Sweden, however, resemble the evolution in Canada.

Both less and more educated Swedish women have been persistently more likely to marry. Among Swedish women born before the 1950s, those without a high school diploma were xx% more likely to marry than were high school graduates, and those with a university degree were yy% more likely to enter marriage. By the cohort 1961-1970, the same patterns were still obvious, with somewhat increased differences between the levels of education (risks ratios of x.x and y.y). Results for more educated women suggest that first union formation increasingly requires women's (as well as men's) earning power. As for less educated women, they might be the "guardians" of women's traditional role in the family.

The Swedish results for cohabitation are more consistent with those in the other two countries than they are for marriage. There, effects of education on entry into cohabitation changed for Canada and Sweden, with all converging to the United States pattern. In this case, however, the effect of education on cohabitation is becoming increasingly weak. In Canada, as well as in Sweden, there was a strong positive effect of education on the likelihood of cohabiting among members of the oldest cohort. With each younger cohort, the relative risks for the least educated have increased and those for the most educated have

relationship between education and the likelihood of entering a first cohabiting union. This clearly suggests that the early innovators vis a vis cohabitation in Canada were the more educated, but their rate of growth since then has been slower than that of the less educated. In Sweden, even though the overall likelihood of entering a cohabitation was high for all women in the sample, younger educated women are less likely to enter such a relationship than older educated women, whereas the opposite is true for less educated women (data not shown).

The pattern in the United States is less clear. The two middle cohorts also seem to show that the effect of education was becoming increasingly negative, as in Canada. The oldest cohort, however, also had a negative gradient (more so than the next oldest). We tend to discount the oldest cohort for the United States, given the very small number of cases. What is clear, however, is that there is little evidence for an independence effect in these results, and some indication that if it were important once (particularly among the older Canadian women), it is no longer so among younger cohorts of women in the three countries.

DISCUSSION

This study has shown that the ways American, Canadian, and Swedish women enter their conjugal life have changed substantially in the last 30 years, and that the effects of education/human capital on entering a first union, of whichever type, are also changing. The circumstances affecting union entry among women born prior to 1950 were quite different from those influencing younger cohorts in all three countries. The simple patterns assumed to shape separate and symmetrical roles for men and women appear to be taking new shapes with the growth in cohabitation and possible changes in the meanings and commitments underlying family life.

The changes in the effects of educational attainment that have occurred among

are consistent with symmetrical patterns of change for Canadian men (Turcotte and Goldscheider 1997). They suggest that the increased importance of education for women's entry into marriage means that union formation increasingly requires women's earning power.

When we consider other industrialized countries we also find similar results. In France, studies have shown how cohabitation has evolved first from a phenomenon restricted to blue-collar classes, then to a form of living arrangement for more educated people, and most recently to a widely used form of union formation and childbearing family structure (Villeneuve-Gokalp 1990; Toulemon 1995). Similar patterns are reported for Norway (Blom 1994) and some Latin American countries (Castro Martin 1997). In other research not reported, Canada has also been converging to the United States pattern in the effects of work and school.

Of course, the three countries are unique in many ways. School enrollment is an even bigger impediment to first union formation for women in the United States and than in Canada or Sweden, and not being employed nor going to school is more conducive to marrying among Swedish than among American women. In the United States, ethnic and regional differences remain, and important linguistic and regional differences remain in the dynamics of family formation in Canada. It is likely that more detailed analysis of the situation in Quebec will reveal even greater differences in pattern and change, as would detailed analyses of the American black community (Raley 1996).

Nevertheless, it is important to continue to compare, both between countries and over time, if we are to understand the dynamics underlying the "second demographic transition" (van de Kaa 1987) and the situations fostering (or not) the independence effect in this time of transition in family demography. And because the independence effect also has direct implications for the union formation behavior of men, it is clear that it is important to examine

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² We also used the information provided by GSS on when the respondent last attended school.

³ As our categories are mutually exclusive, those that lived in both a step-parent and a lone-parent family were classified in the former category, treating it as the absorbing state.

⁴ Other studies have shown that except for Quebec, which is becoming increasingly different in this regard, regional differences as to the scope of the phenomenon of common-law unions are decreasing over time (Nault and Bélanger, 1996; Dumas and Bélanger, 1997). For the purposes of this analysis, we therefore grouped together the Canadian provinces other than Quebec.)

⁵ Tests were conducted using binomial and multinomial logit models and yielded results substantially similar to the general proportional hazard models.

¹ We haven't finished this part of the analysis.

Table 1 Percentage Distributions of Women Who have Entered a First Union, By Type, and Women Who Never Entered a Union, USA, Canada, and Sweden, 1995 (1992 for Sweden)¹

	USA			Canada			Sweden		
	Cohabitation	Marriage	No union	Cohabitation	Marriage	No union	Cohabitation	Marriage	No union
Birth cohort ^{2,3}									
Before 1951	1.3	3.7	0.7	8.9	62.1	14.4	19.4	40.8	6.7
1951-1960	37.3	57.1	9.1	31.5	22.3	8.6	42.6	35.6	18.9
(1961-1970)	45.7	34.1	23.0	45.5	14.3	21.1	38.0	23.6	74.4
1971-1980	15.7	5.1	67.2	14.2	1.2	55.8			
Educational attainment ⁴									
Less than high school	31.5	26.9	42.8	26.1	35.6	33.1	33.4	37.7	5.1
(High school diploma)	55.8	55.3	41.9	50.2	37.5	33.9	52.7	47.3	58.9
College/University	12.7	17.8	15.4	23.8	26.9	33.1	13.9	15.1	36.0
Activity status ⁴									
School only	17.0	16.3	32.4	27.5	10.5	40.4	22.1	23.6	17.8
Work and school	13.5	11.3	15.8	8.7	5.5	5.4	6.2	4.1	2.4
(Work only)	52.6	54.8	31.8	47.8	52.6	42.1	55.6	31.8	67.7
Neither	16.9	17.6	20.0	16.1	31.4	12.0	16.1	40.4	12.1
Presence of children before union ⁴									
Birth	18.6	8.8	16.6	7.7	6.7	8.9	4.2	7.5	7.4
Conception	5.0	11.8	1.1	3.7	11.0	0.0	4.8	11.3	0.0
(No child)	76.4	79.3	82.3	88.6	82.4	91.1	91.0	81.2	92.6
Family origin ⁵									
(Two-parent family)	59.8	75.4	60.4	78.6	89.3	80.4	84.8	93.5	85.9
Ever in step-family	14.7	8.5	13.8	5.1	2.6	4.1			
Ever in lone-parent family	21.8	13.7	22.9	14.6	6.6	14.0	13.4	5.8	13.1
Others	3.7	2.5	2.9	1.7	1.5	1.4	1.8	0.7	1.0
Number of siblings									
0	1.5	1.1	1.4	3.8	4.5	7.8	8.0	7.5	6.1
1	5.0	3.7	8.9	20.9	13.9	30.9	32.4	25.3	39.7
(2)	18.3	16.6	29.1	23.3	16.1	23.8	29.0	20.9	27.3
3	21.6	20.7	24.8	17.2	14.9	15.5	14.7	13.4	14.5
4	17.6	18.4	14.7	11.0	11.4	7.2	7.9	10.3	6.4
5+	36.1	39.6	21.1	23.8	39.3	14.8	8.0	22.6	6.1
Religious attendance									
Not at all	17.4	8.3	12.9	55.9	30.0	41.8	65.9	38.4	48.5
(Sometimes)	26.5	21.3	27.8	35.8	37.4	37.2	31.9	38.0	41.4
At least once a week	56.1	70.4	59.4	8.4	32.6	21.0	2.2	23.6	10.1

¹Models include as well foreign birth (US, Canada, and Italy), region (US, Canada, and Italy), ethnicity (US) and language (Canada)

²For Italy the youngest cohort is restricted to women born between 1971 and 1975.

³For Sweden the categories are composed of women born in 1949, 1954 and 1959, and 1964 and 1969.

⁴For time-dependent variables, the value represents the characteristic of the respondent during the last period before the event, that is one-tenth of a year prior to first union.

⁵The category "Ever in step-family" could not be constructed for Italy

Sources: 1995 National Survey of Family Growth, USA; 1995 General Social Survey, Canada; 1995 Fertility and Family Survey, Italy; 1992 Family Survey, Sweden.

Table 2. Determinants of Women's First Union Formation, USA, Canada, and Sweden, 1995 (1992-93 for Sweden)

		USA		Canada		Sweden	
		Cohabitation	Marriage	Cohabitation	Marriage	Cohabitation	Marriage
Birth cohort	Before 1951	0.54*	1.92*	0.10*	2.14*	0.83*	1.91*
	1951-1960	0.76*	1.51*	0.71*	1.67*	1.02	1.17
	(1961-1970)	1.00	1.00	1.00	1.00	1.00	1.00
	1971-1980	1.46*	0.64*	1.36*	0.46*		
Educational attainment	Less than high school	1.09^	0.82*	0.86	0.96	0.93	1.44*
	(High school diploma)	1.00	1.00	1.00	1.00	1.00	1.00
	College/University	1.12*	1.51*	1.16	0.90	1.41*	1.42
Activity status	School only	0.20*	0.27*	0.39*	0.53*	0.51*	1.28
	Work and school	0.51*	0.39*	0.83*	0.74*	1.13	1.56
	(Work only)	1.00	1.00	1.00	1.00	1.00	1.00
	Neither	0.82*	1.19*	0.79*	1.54*	1.01	3.73*
Presence of children before union	Birth	1.81*	1.26*	1.38*	1.60*	1.56*	1.87*
	Conception	3.33*	11.5*	4.02*	12.4*	5.77*	12.46*
	(No child)	1.00	1.00	1.00	1.00	1.00	1.00
Family origin	(Two-parent family)	1.00	1.00	1.00	1.00	1.00	1.00
	Ever in step-family	1.34*	0.87*	2.06*	1.16	1.21	0.51*
	Ever in lone-family	1.60*	1.03	1.58*	0.84*	1.34	0.12*
	Others	1.48*	0.88	1.50	0.97		

Other Controlled Variables: Siblings; Religious attendance; Region of residence; Place of birth (Canada and USA); Race and hispanic origin (USA); Mother tongue (Canada)

*Risk ratio significantly different from reference category at .05 level

Sources: 1995 National Survey of Family Growth, USA; 1995 General Social Survey, Canada; 1992 Fertility and Family Survey, Sweden

Table 3. Changing Effect of Educational Attainment on Women's First Union Formation, by Union Type, Sex and Birth Cohort, US and Canada, 1995

	Less than high school	High school	University
US			
Marriage			
Before 1951	0.69	1.00	1.54
1951-1960	0.94#	1.00	1.38#
1961-1970	0.68*	1.00	1.70*
Cohabitation			
Before 1951	1.16	1.00	0.78
1951-1960	0.97#	1.00	1.19
1961-1970	1.17*	1.00	1.02
Canada			
Marriage			
Before 1951	1.01*	1.00	0.88
1951-1960	0.97#	1.00	0.93
1961-1970	0.60*	1.00	0.92
Cohabitation			
Before 1951	0.40#	1.00	2.32#
1951-1960	0.85	1.00	1.40#
1961-1970	0.99	1.00	0.97
Sweden			
Marriage			
Before 1951	0.84	1.00	2.02*
1951-1960	1.05	1.00	1.39*
1961-1970	0.87	1.00	1.15
Cohabitation			
Before 1951	1.63* #	1.00	1.64 #
1951-1960	1.23	1.00	0.88
1961-1970	1.50	1.00	1.07

* Significantly different from the reference category within the cohort

Significantly different from the effect of that level of education for the 1961-70 cohort.

