



Max-Planck-Institut für demografische Forschung
Max Planck Institute for Demographic Research
Konrad-Zuse-Strasse 1 · D-18057 Rostock · GERMANY
Tel +49 (0) 3 81 20 81 - 0; Fax +49 (0) 3 81 20 81 - 202;
<http://www.demogr.mpg.de>

MPIDR WORKING PAPER WP 2009-021
JULY 2009 (REVISED DECEMBER 2010)

**The increase in fertility in cohabitation
across Europe:
Examining the intersection between
union status and childbearing**

Brienna Perelli-Harris
Michaela Kreyenfeld
Wendy Sigle-Rushton
Renske Keizer
Trude Lappegård
Aiva Jasilioniene
Caroline Berghammer
Paola Di Giulio
Katja Koepfen

© Copyright is held by the authors.

Working papers of the Max Planck Institute for Demographic Research receive only limited review. Views or opinions expressed in working papers are attributable to the authors and do not necessarily reflect those of the Institute.

**The increase in fertility in cohabitation across Europe: Examining the
intersection between union status and childbearing**

Brienna Perelli-Harris¹, Michaela Kreyenfeld¹, Wendy Sigle-Rushton², Renske Keizer³, Trude Lappegard⁴, Aiva Jasilioniene¹, Caroline Berghammer⁵, Paola Di Giulio⁵, and Katja Koeppen¹

1 Max Planck Institute for Demographic Research: perelli@demogr.mpg.de

2 London School of Economics

3 Erasmus University Rotterdam

4 Statistics Norway

5 Vienna Institute of Demography

Acknowledgments: We would like to thank Karolin Kubisch for harmonizing and cleaning the data, Joshua Goldstein, Elizabeth Thomson, and Sheela Kennedy on input into the development of analyses, Theodore Gerber with help conceptualizing Figure 1, and Kelly Musick, Jim Raymo, and other members of the MPIDR for useful comments and suggestions. We would also like to acknowledge financial support from the Laboratory of Economic and Social Demography at MPIDR. Please see www.nonmarital.org for acknowledgments and further information about each individual survey.

Over the past several decades, childbearing within cohabitation has increased throughout Europe. This changing behavior may indicate that cohabitation is becoming an “alternative to marriage;” however, pregnancy and birth may also prompt changes in union status. Using union and fertility histories from 11 countries, we employ life-tables to analyze the intersection between union status and childbearing. With data extending back to the 1970s, we investigate how this relationship has changed over time. We examine whether cohabiting unions with children are more likely to be converted to marriage or dissolve and examine union transitions for women who were single at conception or birth. We find that patterns of union status and childbearing develop along different trajectories depending on the country. Despite widespread claims that marriage is disappearing in Europe, our findings suggest that marriage still remains the predominant institution for raising a family.

Over the past several decades, childbearing within cohabitation has increased dramatically in Europe (Kiernan 2004; Sobotka and Toulemon 2008). The decision to give birth or raise children in a cohabiting union has attracted the attention of family researchers, because it challenges one of the most significant legal and social functions of marriage. Therefore, the increase in childbearing within cohabitation may indicate that marriage is becoming more and more irrelevant, with cohabitation becoming an “alternative to marriage” (Heuveline and Timberlake 2004; Kiernan 2004; Manning 1993, Raley 2001). Nonetheless, even in countries where the percent of births within cohabitation is high, we might be able to discern distinct differences in the dynamics of cohabitation and marriage. Childbearing and childrearing may still be important for prompting couples to marry. The period surrounding birth - conception and the years directly following a birth - may lead couples to reevaluate their relationship and convert it to marriage, for legal, social or personal reasons. However, the normative pressure to follow the standard sequencing of marriage and childbearing may have lessened (Billari 2001); couples may jointly plan to marry and have children and happen to have a child first (Wu and Musick 2008). Thus, changes in union status during the family formation process may indicate that marriage is not necessarily irrelevant, but instead simply postponed along the lifecourse.

In this paper, we examine the intersection between union status and childbearing to show how patterns of family formation are changing across countries and over time. Our study aims to show whether cohabitation persists throughout the childbearing and early childrearing process and can thus be described as an “alternative to marriage,” or whether marriage remains the preferred setting for childbearing and rearing. Because we are interested in the intersection between childbearing and cohabitation, we focus specifically on women who have children and

do not examine childless cohabitation. We do, however, examine whether unions with children began as cohabiting or marital partnerships. This provides information on whether cohabitation could still be most commonly practiced as a “prelude to marriage” (Heuveline and Timberlake 2004) rather than as a setting for childbearing. Thus, our study explores whether and where in the family formation process couples are most likely to convert their unions: before first conception, during pregnancy, or in the first few years after first birth. Although implicit in much of the literature on the form and function of cohabiting unions, this previously unexamined perspective provides important insights into the nature of cohabitation and the role of children within these relationships.

Examining this intersection in cross-national perspective provides further insights into whether the diffusion of new forms of family behaviors is uniform across countries and over time. Some researchers have posited that countries progress through stages: cohabitation starts out as a marginal behavior, becomes more acceptable as a prelude to marriage, and then becomes more widespread and likely to involve childbearing (van de Kaa 2001, Kiernan 2004). Ultimately, marriage and fertility are decoupled, with cohabiting unions becoming a normative setting for parenthood (van de Kaa 2001). The Scandinavian countries, with the highest levels of cohabitation before marriage and highest percent of births within cohabitation, have been described as entering the final stages of this transition (Kiernan 2004). Yet it is unclear to what extent cohabitation is displacing marriage, even in Scandinavia (Bernhardt et al 2007). Therefore, only by mapping out how childbearing and union formation intersect over both space and time can we determine whether all societies follow a standard path.

In order to examine the intersection between childbearing and union status, we employ union and fertility histories from 11 countries, broadly representing different family regimes in Europe. Using life-table analyses, we follow cohabiting women to show whether and where cohabitation persists throughout the period of childbearing and early childrearing. In addition, we examine whether cohabiting unions with children are more likely to be converted to marriage or dissolve; societies could be characterized by a preponderance of relationships that are unstable, even if they involve childbearing. Additionally, we examine women who were single (not living with a partner) at conception or birth, and whether they subsequently entered marriage or cohabitation. Taken together, this study illustrates how relationship context at multiple points in the childbearing process differs across countries. It provides insights into whether marriage and cohabitation are distinct institutions, or whether marriage has simply been shifted to later stages in the life-course. In addition, with data extending back to the 1970s, we can investigate how the relationship between fertility and union status has changed over time. We can then determine whether changing patterns of union formation and childbearing tend to follow sequential stages that are uniform across countries, or whether patterns of childbearing within cohabitation have developed along different trajectories.

THEORETICAL FRAMEWORK

In the demographic literature, a substantial body of cross-national research has compared fertility (for example, see Frejka et al 2008, Kohler, Billari, and Ortega 2002) and union formation (for example, see Andersson and Philipov 2002, Kalmijn 2007, Hoem et al 2009, Kiernan 2004). Far fewer studies, however, have focused on the intersection between union and fertility behavior, especially across countries.

Most of the studies on the interrelationship between union and fertility behavior have focused on only one country – usually the United States – and attempted to disentangle joint decision-making processes (Upchurch et al 2002, Brien et al 1999, Aasve 2003, Steele et al 2005), although some studies have compared the interrelationship between union formation and fertility in two countries (e.g. Le Goff 2002, Baizan, Aasve, and Billari 2004). These studies applied advanced statistical methods to disentangle the causal influence of union status on childbearing decisions. Few studies, however, have mapped the dynamics of unmarried parenthood across countries or over time. Doing so provides insights into how context-specific factors influence family formation behavior, as well as providing information on the diffusion of family behavior across and within countries.

Stages in the family formation process

In this paper, we use a lifecourse approach to examine changes in union formation throughout the process of early family formation. Again, we only focus on unions with children. We conceptualize the early family formation process as including a number of stages: the beginning of the union, conception, birth, and the period after birth (one and three years). These points in the lifecourse are most likely to represent critical junctures in relationships, when couples decide to enter cohabitation versus marriage, or change their union status because of childbearing or childrearing. Here we focus only on first births, since it simplifies the analyses and first births are probably most relevant for prompting changes in union status; in most countries the percent of first births within cohabitation is higher than the percent of second births within cohabitation (Perelli-Harris and Sigle-Rushton 2010). However, we acknowledge that subsequent births may also prompt changes in union status.

In order to illustrate how unions can change throughout the childbearing process we present Figure 1. The boxes on the figure represent points throughout the family formation process, and the arrows represent the periods in which union status can change. The gray middle row of boxes represents persistent cohabitation, in which cohabitation can be considered an “alternative to marriage.” The black dashed lines represent exit from cohabitation. If women are more likely to exit cohabitation and enter marriage (the thicker dashed black lines), marriage can still be considered important to the family formation process; marriage has been postponed along the lifecycle but not eschewed altogether. However, if a high percent of women dissolve their cohabiting unions and become single, then we can assume that cohabitation is relatively unstable, similar to a “coresidential relationship,” even though it entails childbearingⁱ. Also of interest is the movement of women who conceive while single and then enter into cohabitation or marriage, represented by the dark grey dotted lines. We do not, however, follow married women to see whether their unions dissolve, since a very small percent of the women in our samples divorced during the childbearing process, and marital dissolution is not the focus of this paper. In the next section, we discuss why each stage in the family formation process may be important for prompting changes in union status.

Figure 1 about here

Union status at the start of union and the transition to marriage before conception:

Increasingly, couples are entering unions by cohabiting rather than directly marrying. Couples may cohabit early in a relationship for a number of reasons, such as pooling of resources, sharing housing, or convenience (Smock 2000, Seltzer 2000). For many, cohabitation is an experiment, a place to test out whether individuals are committed to a relationship (Seltzer 2000). Couples may be much more likely to

choose cohabitation over marriage, when they have had personal experience with a previous failed relationship or someone they know has divorced, especially their parents (Teachman 2003). A number of studies have shown that education (e.g. Blossfeld and Huinink 1991; Thornton et al. 1995), employment (e.g. Liefbroer and Corijn 1999; Oppenheimer 2003), or economic resources (e.g. Bracher and Santow 1998; Xie et al. 2003) are important influences on the type of union formed, but these factors may be specific to a particular context, which is not taken into account since most of the studies have focused on only one country. Few studies compare the level of cohabitation and direct marriage across countries to determine how the patterns of union formation differ across countries.

During the period between the start of the union and before conception, many relationships solidify and couples marry for social, emotional, or even financial reasons, for example to take advantage of tax systems that favor marriage (Perelli-Harris et al 2010b). This type of cohabitation is commonly referred to as a “prelude to marriage,” (Villeneuve-Gokalp 1991, Heuveline and Timberlake 2004), or if referring to the figure, it may be more accurate to say “preconception cohabitation.”

Transitions during pregnancy: Conceiving a child within a union often indicates that the union has become more serious. Some researchers have suggested that conception makes a union more “marriage-like” and use conception within cohabitation as an indicator that cohabitation is an “alternative to marriage” (Raley 2001). However, historically, because giving birth out-of-wedlock was outside the norms and legal systems of society, reflected in terms such as “illegitimate” and “bastard” (Laslett 1980), many women married during pregnancy. “Shot-gun” marriages were common in many countries and still are today, particularly in Eastern Europe (e.g. Kostova 2008, Perelli-Harris and Gerber 2010). Now, however, in most countries the legal

status of the parents' union is not important for defining a child's rights, for example receiving an inheritance, although it may be useful for establishing paternity and joint custody (Perelli-Harris et al 2010). Thus, the legal context of a birth is usually less important than social context and the parents' decisions to formalize their union.

Transitions after birth: Couples may decide to marry during the child's first few years of life. Giving birth within marriage may not be as crucial as raising a child within marriage, when marriage may confer certain legal advantages or paternal rights. For example, the German tax code favors the breadwinner model and encourages couples to marry to avoid higher taxes (Konietzka and Kreyenfeld 2002). These incentives would be most relevant when women need to withdraw from the labor market in order to care for very young children, but some couples may wait to marry until after the child is born. In other countries, unmarried parents must negotiate bureaucratic obstacles to gain joint parental custody, and couples may decide that it is simply easier to marry (Perelli-Harris et al 2010). On the other hand, childbirth and marriage may have been jointly planned, and the sequencing of the two events may be irrelevant (Wu and Musick 2008). Thus, in this paper we investigate whether couples are still within cohabitation one and three years after the birth of the child – arbitrary times, but close enough to the birth to suggest that the birth might have prompted marriage.

Unstable relationships

So far, we have primarily focused on exit from cohabitation into marriage throughout different stages of the family formation process. Indeed, researchers often characterize cohabiting unions in Europe, particularly Northern Europe, as being stable, long-term “alternatives to marriage” (Raley 2001, Heuveline and Timberlake 2004). However, cohabitation may be less stable than assumed, even if the couple has children. Many

studies show that cohabiting and marital unions differ substantially, especially in terms of their risk of dissolution (Teachman, Thomas, and Paasch 1991, Liefbroer and Dourleijn 2006, Heuveline, Timberlake, and Furstenberg 2003). Some influential studies have only focused on the propensity for cohabiting unions with children to dissolve (rather than transition into marriage), thereby resulting in single-parent families (Heuveline, Timberlake, and Furstenberg 2003). Clearly, the risks of union dissolution differ by country (Liefbroer and Dourleijn 2006), with cohabitation in some countries characterized as primarily short-term, unstable relationships (Heuveline and Timberlake 2004; Heuveline, Timberlake, and Furstenberg 2003). This indicates that cohabitation in some countries may be less like an “alternative to marriage” and more like an “alternative to single” (Heuveline and Timberlake 2004, Rindfuss and VandenHeuvel 1990, Manning 1993). Below we examine whether in some countries cohabiting unions can still be considered an “alternative to single,” or perhaps more accurately “coresidential dating”, even though they involve periods of childbearing and rearing.

Single women

Conception and birth may prompt changes in union status for single women as well; a woman who conceives while not living with a partner may move in with him during pregnancy or after birth. Thus, pregnancy may increase the percent of births within cohabitation and raise overall cohabitation rates. Here we show whether women who conceive while single are increasingly more likely to enter cohabiting rather than marital unions, or remain single. This provides evidence for whether “shot-gun marriages” are increasingly becoming “shot-gun cohabitations.” Some researchers have suggested that entrance into cohabitation rather than marriage after a single conception provides further evidence that cohabitation is becoming an “alternative to

marriage” (Raley 2001). However, according to our conceptualization, couples would have to remain in cohabitation throughout the childbearing process (up to 3 years after birth) for us to consider cohabitation an “alternative to marriage,” and due to space limitations, we do not consider these trajectories here. Thus, our analysis shows an important part of the process of increasing childbearing within cohabitation, as well as how countries’ cohabitation trends are shaped by the experiences of single mothers.

DATA

The analyses employ several datasets that include retrospective union and fertility histories. The data for Romania, Russia, Hungary, Norway, Austria, France, and Italy come from the Generations and Gender Surveys (GGS), which interviewed nationally representative samples of the resident population in each country. Developed by an international team of experts, the GGS questionnaire in each country was intended to follow a standard format, but several countries had to incorporate it into existing surveys. The other data sources are similar in that they also included retrospective birth and union histories. The Dutch data come from the 2003 FFS and surveyed women aged 18-62. Since the 2009 Austrian GGS only interviewed respondents up to age 45, the 1995-96 Austrian FFS was used to provide information on earlier cohorts. The data for the U.K. is from the British Household Panel Survey and required a slightly different dataset construction. The German data come from the first wave of the “Panel Analysis of Intimate Relationships and Family Dynamics” (PAIRFAM) which was undertaken in 2008-09 and includes the cohorts born 1971-73, 1981-83 and 1991-93; here we only study the 1971-73 cohort. For further information about the surveys and harmonization process see www.nonmarital.org.

Despite slightly different survey designs, information on births and union formation is relatively comparable. Questions about cohabitation could be interpreted differently in different settings, but the questions generally relate to co-resident relationships with an intimate partner. In some of the GGS (and the BHPS), the question specifically refers to cohabiting relationships that last more than three months; in the Italian, German and Austrian surveys, however, there is no minimum length of cohabitation specified. In the France data cohabitation refers to a period greater than six months.ⁱⁱ Most surveys included retrospective histories of women in their 60s and 70s; therefore the analysis of childbearing in the 1970s captures nearly complete childbearing histories. Retrospective histories, however, are subject to recall error. In addition, sampling designs differed across countries, and we weighted the data where appropriate.

ANALYSES

In order to better understand how unions change throughout the childbearing process, we apply life-table techniques (Preston, Heuveline, and Guillot 2001). Cohabiting unions can either transition into marriage or dissolve. We therefore estimate cumulative incidence curves developed for competing events (Gooley 1999). We limit the analyses to women, since men's self-reported fertility histories tend to be less accurate and complete (Rendall et al 1999). Our data include month of child's birth, entrance into cohabiting union, marriage, and union dissolution. Although retrospective data are subject to recall error, especially for the date of entrance or exit from cohabitation and the existence of short-term cohabiting unions (Teitler et al 2006), we expect that marriage and birth dates are more reliable, and therefore less likely to bias estimates of the sequencing of cohabitation, marriage, and birth. For

simplicity and due to data limitations, we focus only on conceptions leading to live births, although we acknowledge that conceptions resulting in miscarriage or abortion could also affect union status. Conceptions are defined by backdating births 9 months. Union status is examined both 12 months and 36 months after the birth. We select women who give birth in a given decade and include three decades for all countries except Austria, where we use two surveys to provide information for two decades, and Germany, which is based on an analysis of cohorts born in 1971-1973.

The first life-table examines to what extent women remain within cohabitation from the start of a first fertile union throughout the childbearing process. This analysis is equivalent to looking at the middle row of Figure 1, or what we call “persistent cohabitation.” We start by selecting women who had a first birth within any type of union in a given ten-year period. The first column of the life-table shows the percent of women whose unions began with cohabitation, as opposed to direct marriage. The next column shows, without reference to the duration of the union, the percent of women who continue to cohabit through to the time of conception. Strictly speaking, the transition from column one to column two does not require life-table techniques, since it is based on the transition to another point in the life-course rather than elapsed time. After this point, we use cumulative incidence curves to examine the percent of women remaining within cohabitation at several time intervals (9 months, 21 months, and 45 months after conception), and women are censored at either marriage or separation. Because of how our sample is selected (to include only women who have birth within a union), transitions out of cohabitation between the start of the union and conception, and between conception and birth are necessarily transitions to marriage. Subsequent transitions can include both marriage and dissolution. All in all, this

analysis demonstrates patterns of attrition from cohabitation at several points in the transition to parenthood and the early years of childrearing.

This analysis is useful because it shows the percent of women who start their unions with cohabitation and then follows them through subsequent life-course periods, finally showing the percent of women who are still in the same cohabiting union three years after birth. However, we would also like to show whether women are more likely to exit cohabitation into marriage or dissolve their unions. Because the first life-table selects all women who gave birth in a union regardless of whether the union began with marriage or cohabitation, the denominator (or selected group) includes married women not just cohabiting women. This means that the table cannot accurately show the percent of cohabiting women who dissolve their cohabiting unions throughout the childbearing process. Therefore, we present a second life-table analysis that only follows cohabiting women starting at conception and allowing for exit into two competing states: marriage or separation. In this analysis, we also use cumulative incidence curves to show the percent of women cohabiting, married or separated 9 months (at birth), 21, and 45 months after conception. This alternative analysis shows in which countries fertile cohabiting unions are more likely to turn into marriage, and in which countries they are more likely to dissolve.

Although our primary focus has been on attrition from cohabitation throughout the childbearing process, single women may also enter cohabitation after conception, thus increasing the percent of overall births within cohabitation. By examining what happens after a single conception, we examine whether and when women are more likely to enter cohabitation after a single conception. This analysis is equivalent to going from square 4 to square 8 or 11 on figure 1. To show these transitions we present another life-table following women who are single at conception. Again, we

use competing risk cumulative incidence curves to show the percent of women who remain single or enter into cohabitation and marriage 9, 21, and 45 months after conception. Because we treat cohabitation and marriage as absorbing states, we do not know whether any of these unions subsequently dissolved in the time period examined. And, of course, we have no way of knowing whether the union is formed with the child's father or another man. In general, however, this analysis provides further information about the nature of cohabiting unions, and whether single mothers are more likely to transition into cohabitation or marriage.

Note that all of these analyses are purely descriptive and do not control for variation in age structure, marital fertility, proportions cohabiting, or childlessness. These factors could affect the percent of women by union status at different points in the childbearing process: for example, older women may be more likely to marry throughout the childbearing process than younger women. However, the goal of our paper is to describe family formation across countries; a descriptive study is a necessary first step in understanding broad changes in the union context of childbearing across countries and over time.

RESULTS

The percent of conceptions and births by union status

Table 1 shows that while the percent of conceptions and births within cohabitation has increased in every country observed, the pattern of nonmarital childbearing varies considerably across Europe and over time. In some countries, the percent of births and conceptions within cohabitation is remarkably similar. For example, in Norway, more than half of all first conceptions and births took place within cohabitation in 1995-2005. In the latest period in France and for the 1971-73 cohorts in eastern Germany

nearly half of all first conceptions and births occurred within cohabitation. These results suggest that in countries with a similar and high percent of conceptions and births within cohabitation, couples do not feel compelled to marry while the women is pregnant, although note that these data are cross-sectional percents, and some of the cohabiting mothers could be entering marriage while the single women enter cohabitation. These data suggest that marriage may have lost its social and legal functions with respect to pregnancy and birth, and that cohabitation can be considered an “alternative to marriage;” however, the detailed analyses below may indicate a different interpretation.

(Table 1 about here)

The similarity between the percent of births and conceptions within cohabitation not only pertains to countries with high levels on births and conceptions within cohabitation, however. In Italy, the low percent of conceptions within cohabitation is accompanied by a similar percent of births within cohabitation for all periods. This suggests that not very many cohabiting unions convert into marriage, although some of the women who conceived while single may have entered cohabiting unions. Italy is usually characterized as a country with a traditional family pattern and “strong family ties” (Reher 1998, Dalla Zuanna 2001), and indeed, the vast majority of childbearing and early childrearing in Italy occurs within union. The large difference between conceptions while single (around 15 % in the latest time period) and births while single (around 5% in the latest time period) also underscores this observation. Note, however, that like other European countries, Italy has also experienced a steady increase in births within cohabitation, and by 2003, 10% of births occurred within cohabitation (not shown).

Most of the other countries examined show a greater difference between the percent of conceptions and births within cohabitation, indicating that women are more likely to change union status during pregnancy. Austria, the Netherlands, and Western Germany show a moderate gap between the percent of conceptions and births to cohabiting women in the latest period examined. These countries have experienced a substantial increase in childbearing within cohabitation over the past few decades, with over 25% of births now occurring within cohabitation.

The largest differences, however, are in Eastern Europe, where conceptions out-of-wedlock are still likely to prompt changes in union status. In Russia and Bulgaria, over half of first conceptions occurred to single or cohabitating women, and many of these led to marriage or, to a lesser extent, cohabitation. In these countries, the high percent of conceptions out of union is probably due to unplanned pregnancies and low or ineffective contraceptive use. Up until the 1990s, the most common form of family planning in this region was abortion, but women were often reluctant to abort first pregnancies due to fears of infertility and other medical concerns (Philipov et al 2004; Perelli-Harris 2005). Although abortion has been declining and contraceptive use has increased, unplanned pregnancies still often lead to marriage. This indicates that marriage may still be important for childbearing and rearing in these countries. Hungary and Romania show similarities with Russia and Bulgaria in that a high percent of conceptions occur to single women, while a high percent of births occur to married women, but the percent of conceptions and births within cohabitation is more similar in Hungary and Romania than in Russia and Bulgaria.

The UK stands out as the only country with a greater percent of births within cohabitation than conceptions within cohabitation, reflecting the greater number of conceptions to single women. Given the relatively small increase in the percentage of

women who are married at birth and the stability of marital unions, some of the single women must be transitioning to cohabitation rather than marriage, suggesting that the traditional pattern of premarital conceptions for single women has been modified, with cohabitation displacing marriage. The profile of nonmarital childbearing in the UK is much more similar to the U.S. than the rest of Europe: both countries have a relatively high proportion of births conceived nonmaritally, and to teenagers (Sigle-Rushton 2008).

Remaining within cohabitation at each stage in the childbearing process

We now turn to the life-table analysis of women who gave birth within a union (table 2). Table 2 shows to what extent women remain within cohabitation from the start of the first fertile union throughout the childbearing process and up to three years after birth. Thus, the table represents “attrition” from cohabitation. Note, however, that because we select for women who gave birth in a union, transitions from cohabitation before birth can only be into marriage, while after birth cohabiting unions can convert into marriage or dissolve. The first column shows the percent of unions started with cohabitation rather than marriage. In nearly every country analyzed, the percent of unions beginning with cohabitation increased remarkably over time, although the level is still low in Italy (17%) and less than a third in Romania (29%). In the Netherlands, the UK, Western Germany, and Bulgaria, however, over 70% of unions started with cohabitation. In the latest periods in Norway, Austria, eastern Germany, and France, around 90% of unions began with cohabitation. These results indicate that across Europe cohabitation is becoming more and more common as a start to unions that produce children (note that it is probably even more common for all unions).

(Table 2 about here)

The second column shows the percent of cohabitators who remained in cohabitation at the time of first conception. This period between the start of union and conception leads to the greatest number of changes in union status, compared to the other transitions sketched on the table. The results suggest that in most countries, among women who give birth, cohabitation is still most important as a test-phase or a “prelude to marriage.” As couples become more committed, they are more likely to marry, even before entering into parenthood. Nevertheless, across all countries, we can see that the percentage of women who remained within cohabitation at the time of conception increases substantially over time. In the latest period in Norway, Austria, Eastern Germany and France, more than 50 % of women who gave birth in a union remained in cohabitation at the time of conception. Slightly fewer than 50 % of these women in Russia, Bulgaria and Western Germany were still cohabiting at the time of conception. In the Netherlands and the UK, the percentages are somewhat lower; only a third of women were still cohabiting at the time of first conception. The percentages are lowest for Hungary (28%), Romania (18%) and especially Italy, with only 10% of women remaining in cohabitation at the time of conception.

In order to better understand the change between columns rather than just the overall attrition from cohabitation, we use the information in table 2 to present the conditional probability of remaining within cohabitation after having reached a particular stage in the childbearing process (Table 3). For example, column one of table 3 shows the percent of women who conceived within cohabitation relative to the percent of women who began their unions within cohabitation (column two of table 2 divided by column one of table 2). This analysis reveals different patterns of family formation. Russia in 1995-2004 stands out as having a moderate percent of women who began their relationships in cohabitation (57%) also conceiving within

cohabitation (70%). This provides evidence that women who cohabit at the beginning of the relationship are more likely to conceive within cohabitation than marry. In the latest period in the Netherlands, on the other hand, 78% of women started their unions with cohabitation, but only 42% of those women conceived within cohabitation. This result indicates that the majority of cohabiting women in the Netherlands exit cohabitation before entering parenthood and instead marry. Thus, cohabitation in the Netherlands might be considered a “prelude to marriage.” Italy is also rather surprising – even though a relatively small percent of all women begin their unions with cohabitation in the latest period (18%), 56% of those women conceived within cohabitation – higher than the percent in the Netherlands. These results suggest that in some countries cohabitation may have diffused as a way to begin unions, but is less common when entering parenthood, while in others, cohabitation has not spread as rapidly for the population as a whole, but those few who do enter it are more likely to conceive within cohabitation rather than marrying first.

(Table 3 about here)

In contrast to the large changes in union status from the start of union to conception, far fewer changes occurred between conception and birth (Tables 2 and 3). Again, because of how our sample is constructed, cohabitation at this point could only convert into marriage. Fewer than 10% of women married during their first pregnancy in Norway and France, while in eastern Germany about 17% married, which resulted in about 50% of women remaining in cohabitation at birth in the latest period in all three countries. In the Netherlands, the UK, Bulgaria, and western Germany around 25 percent of couples remained in cohabitation at birth. However, again, an examination of changes between columns is instructive: in the UK and the Netherlands less than a quarter of women in our sample marry during pregnancy.

Contrary to the changes in union status between start of union and conception for women in the Netherlands, a high percent of women who are cohabiting at the time of conception continue to cohabit during pregnancy, suggesting that cohabitation takes on two main functions in the Netherlands – either as a “prelude to marriage” or, among those who do not marry before conception, as a more persistent state. In Bulgaria, on the other hand, nearly half of women marry during pregnancy. In the latest period in Russia, more than half of women married; 40 percent of the couples were cohabiting at the time of conception, and only 18 percent remained so at the time of birth. This again provides evidence that “shot-gun marriages” are important in Russia and Bulgaria.

Changes in union status, which can include both marriage and dissolution, are far less common for all countries in the first year after birth; since the 1970s, fewer than half of women who gave birth within cohabitation changed their union status in the year following a birth (Table 3, column 4). In the most recent period, over 80% of women who gave birth within cohabitation remained within cohabitation one year after birth, with the exception of Russia (72%) and Romania (75%). In general, persistent cohabitation is higher than would be expected if couples were motivated to marry to gain parental rights or child benefits. Instead, couples could be pressured for time, since they are focused on a baby and have little time for planning a wedding.

Similar results are found up to three years after the first birth; more than two-thirds of women who cohabited one year after birth also cohabited three years after birth, with the exception of Russia. These results suggest that most cohabiting women who give birth within cohabitation are not very likely to change their union status afterwards. As shown above, Russia is the outlier: 38% of Russian women exit cohabitation between one and three years after first birth. Note, however, that this life-

table shows persistent cohabitation among women who had a birth within a union. Consequently, after the birth women can exit cohabitation through marriage or union dissolution. Thus, some of the high percent of women who exit cohabitation in Russia may in fact be dissolving their unions rather than marrying. Our next life-table will address this issue in more detail.

By and large, our data suggest that cohabitation in Europe cannot be described as an “alternative to marriage” with respect to childbearing and early childrearing (Table 2 and 3). In Norway – often described as one of the forerunners of childbearing within cohabitation -- only 35% of women who give birth within any type of union are persistent cohabitators up to three years after the birth; 61% of women who ever cohabit end up marrying or separating throughout the childbearing process. Assuming that most transitions are to marriage, these figures suggest that marriage is far from disappearing. The percent of women who remain within cohabitation is slightly higher in eastern Germany (37%), although note that the German analysis is based only on the women born in 1971-73, which might have different implications for the results. In any case, these results reflect the long history of nonmarital childbearing in this region (Konietzka and Kreyenfeld 2002). In France, about one-third of mothers remain within cohabitation up to three years after the birth, but again 63% marry or dissolve their unions. In Austria, the Netherlands, western Germany, and Bulgaria, around 20% remain within cohabitation throughout the entire process. In the other countries, the childbearing process usually leads to marriage with some union dissolution; less than 15% of mothers remain within cohabitation throughout all steps of childbearing and early childrearing. Although some women enter into cohabitation at different points of the childbearing process (as shown in previous sections), the

majority of women who enter cohabitation and become mothers are not persistent cohabitators.

Finally, there does not appear to be one “trajectory” for the increase in cohabitation throughout the childbearing process. If we take Norway as a model in which childbearing within cohabitation is increasing, we would expect that as direct marriage starts to decline, conceptions within cohabitation should increase, while shot-gun marriages would fall precipitously. In France, on the other hand, the percent of unions that began with cohabitation increased more rapidly – to converge with Norway by the late 1990s – but the percent of conceptions within cohabitation remained lower. The decrease in shot-gun marriages in France, however, does appear to have occurred as equally rapidly as in Norway. The Austrian pattern appears to be similar to France, but with more marriages during pregnancy. The pattern in the Netherlands and the UK, however, is quite different: these countries had high levels of cohabitation at the beginning of union, but far fewer conceptions within cohabitation, indicating that although premarital cohabitation is more or less acceptable, it is not chosen as an ideal family type in which to start childbearing. Most recently, however, cohabitators in the UK and the Netherlands are less likely to marry during pregnancy, suggesting two types of cohabitation in these countries.

The trajectory also differs in Eastern Europe where conceptions within cohabitation still play a role. In particular, in Russia and Hungary, cohabitation at the start of the union has increased rapidly, but a high percent of conceptions still occur within cohabitation to then be “legitimated” by birth. As discussed above, the high percent of conceptions within cohabitation is most likely due to ineffective contraception, while the lower percent of births within cohabitation is remnant of the long history of legitimating nonmarital pregnancies. Finally, Italy has an unusual

pattern of cohabitation: the percent of women who start their union has increased, but the percent of those women who conceive within cohabitation has declined. This suggests that before 1995, cohabitation was such a marginal state, that it was probably practiced “persistently” by few women. Since the early 1990s, cohabitation has started to increase as a “prelude to conception,” but a segment of the population still remains within cohabitation throughout the childbearing process. Thus, although cohabitation is “marginal” in Italy, it is not completely at odds with childbearing.

Transitions into marriage or union dissolution for cohabiting women

We next turn to an examination of whether cohabiting unions were more likely to be converted into marriage or dissolved throughout the childbearing process. Compared to table 3, which examines all women who gave birth within a union, table 4 only selects women whose first conception occurred within cohabitation. Table 4 shows that very few women dissolve their unions between conception and first birth or even three years after birth. In most countries in most time periods, fewer than 11% of cohabiting unions dissolved within three years after birth.

(Table 4 about here)

However, some countries stand out as having a much higher percent of women who dissolve their unions in the early childrearing period. Russia has the highest percent of women who dissolve their cohabiting unions, and in the latest period over a quarter of women who conceived within cohabitation ended their unions within three years. Evidently this is a trend that dates back several decades; in 1975-84 about 15% of cohabiting unions that conceived a child ended within three years. Again, this trend is most likely due to unplanned pregnancies in unstable relationships, and is in accordance with studies that show premarital conception increases divorce risk (Jasilioniene 2007). The UK had a dramatic increase in unstable

cohabiting unions with children in 1985-94, with 23% of cohabiting unions that included conception ending in dissolution within three years after birth. This result is in line with other studies that suggest cohabitating unions, even those with children, were more unstable during this period (Kiernan 2004). Recently, however, union instability appears to be decreasing, and in the latest period only about 11% of unions dissolved within three years. This decline may also be due to a change in the composition of women who remain in long-term stable unions.

Both western and eastern Germany have a similar percent of unions that dissolve within three years – about 10%. However, more women in western Germany enter into marriage throughout the childbearing process (and indeed before conception as shown in table 2), which may indicate that in western Germany women are more likely to either marry or dissolve their cohabiting unions, while in eastern Germany cohabitating unions are more likely to be long-term unions, with some marriage and dissolution. Finally, we also observe fluctuations in Hungary, Romania and Italy, but this could be due to small sample size. All in all, these results show that countries exhibit substantial variation in union dissolution - even when childbearing is involved – implying that the meaning and the development of cohabitation differs across Europe.

Conceptions to single women

In Table 5 we focus on women who are single at the time of conception and examine whether they entered cohabitation or marriage by birth, one and three years after birth. Table 5 shows whether cohabitation is becoming a more common union alternative for single women than marriage, but also to what extent countries are characterized by women persistently remaining single. Note that the countries are ordered by percent of single births according to table 1, and recall that eastern

Germany, the UK, and Russia all have 15% or more births outside of union. Eastern Germany stands out as having a high percent of conceptions and births to single women, but we can also see that single women are far more likely to enter cohabitation than marriage. These data are in line with the previous finding that less than one-third of births in eastern Germany occur within marriage.

(Table 5 about here)

In most other countries, the percent of all first births to single mothers has declined slightly or remained stable, and more and more women enter into cohabitation rather than marriage. Nonetheless, a good proportion still remain single at the time of birth, especially in the Netherlands, Austria, and France, where over 50% of women who conceive while single give birth while single. These results suggest that single women who conceive while single are a select group and less likely to enter into union during the childbearing process: 42% of single women in Austria and 54% of single women in the Netherlands still have not entered a union up to three years after birth, although that percent is slightly lower in France (27%).

Nonetheless, in some countries, women who were single at conception prefer marriage over cohabitation throughout the childbearing process; a continuation of the tradition of shot-gun marriages. In Russia, Hungary, Romania, and Italy, far more single women entered marriage than cohabitation, although the percent entering cohabitation did increase over time in all of these countries. This suggests that even in countries where childbearing within cohabitation is still relatively marginal, cohabitation is becoming a more widespread response to pregnancy and childbirth out-of-union.

DISCUSSION

In this study we find that across Europe, women experience considerable changes in union status from the start of the union and throughout the childbearing and early childrearing process. Although the percent of fertile unions that begins with cohabitation has increased substantially, the majority of women subsequently marry sometime around the birth of a first child. By and large, marriage is not disappearing from Europe, but is instead being postponed to later in the family formation process. We also show that family formation strategies which occur throughout the childbearing process differ across time and space. In particular, the analyses show that countries with similar levels of prevalence of childbearing within cohabitation may have very different levels of prevalence before or after pregnancy.

Some limitations of this study must be noted. First, by focusing on first births, we do not address possible increases in nonmarital childbearing for higher parities, which could lead to slightly different interpretations from those presented above. Second, our results do not account for changes in marital fertility or the age structure of the population. Because our data come from surveys and in some cases we are analyzing relatively rare behaviors, some of the percents are based on small numbers and may be imprecise. Third, each survey suffers from specific limitations, such as biased response rates, restricted age range, or missing data.ⁱⁱⁱ , Finally, the interpretations are very general and do not capture the heterogeneity of each society, heterogeneity which may be indicative of intra-country trends occurring simultaneously. However, since our goal is to focus is on broad comparisons and representative patterns, we think this analysis is a good starting point for examining nonmarital childbearing and cohabitation and raising important questions about family change in post-industrial countries.

All in all, these findings suggest several general patterns across Europe. The first pattern occurs in countries where cohabitation has become more prevalent, both as a setting for childbirth and early childrearing: Norway, France, and to some degree Austria. In these countries fewer than 10% of fertile cohabiting unions dissolve within three years after the birth. Nonetheless, in Norway and France less than one-third, and in Austria less than one-quarter of women who give birth within a union remain within cohabitation up to three years after birth, indicating that the vast majority of women who ever cohabit marry at some point in the process. The second pattern is represented by the Netherlands, western Germany, and Bulgaria. In these countries, around a quarter of first mothers in our sample gave birth in cohabitation and about 20% of those who gave birth in a union were still in cohabitation three years after birth. These countries are characterized by relatively few cohabiting unions that dissolve, a low percent of births to single-mothers, and the replacement of shot-gun marriages with shot-gun cohabitations for women who conceive while single. In general in these countries, cohabitation has become more common before starting a family, but some women do enter into long-term cohabitation.

In eastern Germany, the UK, and Russia, conceptions and births are more likely to occur out-of-union due to the high percent of conceptions and births to single mothers. Eastern Germany stands out as the region with the lowest percent of births within marriage, although a relatively large proportion of the cohabiting unions do remain stable throughout the childbearing process, indicating that cohabitation for these women is more likely to be a persistent state. Indeed, a greater percent of mothers who gave birth in a union in eastern Germany start their unions within cohabitation and remain within cohabitation throughout the childbearing process than in Norway. Russia and the UK, on the other hand, are the countries with the most non-

marital union instability, with cohabiting unions in Russia becoming even more unstable over time. Shot-gun marriages are still common in Russia, with up to 70% of cohabitators marrying during pregnancy. Union dissolution in Russia partially accounts for the low percent of women who are still in a cohabiting union three years after birth. Finally, Hungary, Romania, and Italy are still characterized by a smaller percent of women who cohabit. Nonetheless, a substantial proportion of the women who give birth in a union, are persistent cohabitators.

These patterns did not develop along the same trajectories in all countries nor should they be interpreted as sequential stages of development and change. For example, the Netherlands is clearly not following the Norwegian pattern: even though the percent of mothers who started their unions with cohabitation has increased substantially, the percent of conceptions within cohabitation has not increased as rapidly. Because of its long history with single-motherhood, the U.K. does not fit into the typical Scandinavian trajectory, either. The pattern of the late 1980s in the U.K. was similar to the “dating relationship” pattern, with cohabitation characterized by unstable relationships and related to single motherhood. More recently, however, cohabitation has shifted towards preconception behavior. Thus, the U.K. in the late 1990s appears to be approaching the pattern in the Netherlands, where marriage is still the preferred institution for raising children. And while cohabitation is quickly overtaking direct marriage in much of Eastern Europe, the pattern of pregnancy within cohabitation followed by shot-gun marriages has been much slower to change, indicating that marriage is still preferred as a setting for childrearing.

Taken together, our findings show that even if the social meaning of cohabitation continues to shift over time, norms about marriage as the conventional setting for raising children may be stronger in some countries than others (Kiernan

2004). The specific explanations for why countries develop different trajectories are complex and multi-faceted. Differences between societies are the result of a variety of cultural norms, expectations, and attitudes (Heuveline and Timberlake 2004). Ideological change occurs at different rates and interacts differently across various cultural systems. The political structure and welfare-state model of a country also leads to changes in family formation (Neyer and Andersson 2008; Esping-Anderson 1990; Perelli-Harris et al 2010b). New laws and policies that formally recognize cohabiting relationships reinforce the legitimacy of cohabiting unions and make it easier for couples to live together regardless of whether they plan to marry (Perelli-Harris et al 2010b). It is important to note, however, that as marriage and childbearing become decoupled, some couples postpone marriage to accord with life milestones that have nothing to do with childbearing, for example finishing education, securing steady employment, or buying a house. Others wait until they can afford a wedding, which is increasingly becoming a substantial expense. Thus, economic factors may delay marriage irrespective of social norms or expectations, although as our findings suggest on a population level, among cohabiting couples, an impending child is linked to marriage.

In conclusion, our findings help to illuminate how childbearing and union status intersect across Europe. Overall, these trends indicate that there is no single path that leads to the type of cohabitation where marriage is irrelevant. Instead, our research shows that despite widespread claims that marriage is disappearing in Europe, it still remains the predominant institution for raising a family. Stages in the childbearing process – predominantly the period before conception and birth – prompt entrance into marriage and hence change the meaning of cohabitation. Future contextual research is needed to explain why these stages matter.

References:

- Aassve, Arnstein. 2003. "The Impact of Economic Resources on Premarital Childbearing and Subsequent Marriage among Young American Women." *Demography* 40:105-126.
- Andersson, Gunnar and Dimiter Philipov. 2002. "Life-table representations of family dynamics in Sweden, Hungary, and 14 other FFS countries: A project of descriptions of demographic behavior." *Demographic Research* 7:67-144.
- Baizan, Pau , Arnstein Aassve, and Francesco C. Billari. 2004. "The Interrelations Between Cohabitation, Marriage and First Birth in Germany and Sweden " *Population and Environment* 25:531-561.
- Bernhardt, Eva, Turid Noack, and Kenneth Aarskaug Wiik. 2007. "Cohabitation and commitment: Is cohabitation really indistinguishable from marriage in Norway and Sweden?" in *Population Association of America Meeting*. New York, NY.
- Billari, Fransesco C. 2001. "The analysis of early life courses: Complex descriptions of the transition to adulthood." *Journal of Population Research* 18:119-142.
- Blossfeld, Hans-Peter and Johannes Huinink. 1991. "Human capital investments or norms of role transition? How women's schooling and career affect the process of family formation." *The American Journal of Sociology* 97:143-168.
- Bracher, M., Santow, G. 1998. "Economic independence and union formation in Sweden." *Population Studies* 52:275-294.
- Brien, Michael J., Lee A. Lillard, and Linda J. Waite. 1999. "Interrelated family-building behaviors: Cohabitation, marriage, and nonmarital conception." *Demography* 36:535-551.
- Dalla Zuanna, Gianpiero. 2001. "The banquet of Aeolus: A familistic interpretation of Italy's lowest low fertility." *Demographic Research Special Collection* 3:133-

Esping-Andersen, Gosta. 1990. *The three worlds of welfare capitalism*. Princeton, NJ: Princeton University Press.

Frejka, Tomas, Tomas Sobotka, Jan M. Hoem, and Laurent Toulemon, eds. 2008.

"Childbearing Trends and Policies in Europe." *Demographic Research* 19.

Heuveline, Patrick, Jeffrey M. Timberlake, and Frank F. Furstenberg, Jr. 2003.

"Shifting childrearing to single mothers: results from 17 Western countries." *Population and Development Review* 29:47-71.

Heuveline, Patrick, and Jeffrey M. Timberlake. 2004. "The role of cohabitation in family formation: the United States in comparative perspective." *Journal of Marriage and the Family* 66:1214-1230.

Hoem, Jan M., Jasilioniene, Aiva, Kostova, Dora, and Muresan, Cornelia. 2009.

"Traces of the Second Demographic Transition in selected countries in Central and Eastern Europe: union formation as a demographic manifestation." *European Journal of Population* 25:123-156.

Jasilioniene, Aiva. 2007. "Premarital conception and divorce risk in Russia in light of the GGS data." in *MPIDR Working Paper*. Rostock, Germany.

Kalmijn, Matthijs. 2007. "Explaining cross-national differences in marriage, cohabitation, and divorce in Europe, 1990-2000." *Population Studies* 61:243-263.

Kiernan, Kathleen. 2004. "Unmarried Cohabitation and Parenthood: Here to Stay? European Perspectives." in *The Future of the Family*, edited by D. P. Moynihan, Timothy M. Smeeding, and Lee Rainwater. New York: Russell Sage Foundation.

Kohler, Hans-Peter, Francesco C. Billari, and Jose Antonio Ortega. 2002. "The

- emergence of lowest-low fertility in Europe during the 1990s." *Population and Development Review* 28:641-680.
- Konietzka, Dirk and Michaela Kreyenfeld. 2002. "Women's Employment and Non-Marital Childbearing: A Comparison between East and West Germany in the 1990s." *Population -E* 57:331-358.
- Kostova, Dora. 2008. "Union formation in times of social and economic change: evidence from the Bulgarian and Russian GGS." Pp. 258 Rostock: Universität Rostock, Wirtschafts- und Sozialwissenschaftliche Fakultät.
- Laslett, Peter Karla Oosterveen, and Richard M. Smith. 1980. *Bastardy and its Comparative History*. London: Edward Arnold.
- Le Goff, Jean-Marie. 2002. "Cohabiting unions in France and West Germany: Transitions to first birth and first marriage." *Demographic Research* 7:593-624.
- Liefbroer, Aart C. and Edith Dourleijn. 2006. "Unmarried Cohabitation and Union Stability: Testing the Role of Diffusion Using Data from 16 European Countries " *Demography* 43:203-221.
- Liefbroer, Aart C. and Martine Corijn. 1999. "Who, What, Where, and When? Specifying the impact of educational attainment and labor force participation on family formation." *European Journal of Population* 15:45-75.
- Manning, Wendy D. 1993. "Marriage and cohabitation following premarital conception." *Journal of Marriage and the Family* 55:839-850.
- Neyer, Gerda and Gunnar Andersson. 2008. "Consequences of family policies on childbearing behavior: Effects or artifacts?" *Population and Development Review* 34:699-724.
- Oppenheimer, Valerie K. . 2003. "Cohabiting and Marriage during Young Men's

- Career-Development Process." *Demography* 40:127-149.
- Perelli-Harris, Brienna. 2005. "The path to lowest-low fertility in Ukraine." *Population Studies* 59:55-70.
- Perelli-Harris, Brienna, Nora Sanchez Gassen, and Christin Loffler. 2010. "The relationship between the state, cohabitation, and childbearing across Europe: policy dimensions and theoretical considerations." in *European Population Conference*. Vienna.
- Perelli-Harris, Brienna and Theodore P. Gerber. 2010. "Nonmarital childbearing in Russia: Second Demographic Transition or Pattern of Disadvantage?" *Demography*.
- Perelli-Harris, Brienna and Wendy Sigle-Rushton. 2010. "Changes in union status between first and second births: findings from across Europe." in *Population Association of America*. Dallas.
- Philipov, D, E. Andreev, T Kharkova and V. Shkolnikov 2004. "Induced Abortion in Russia: Recent Trends and Underreporting in Surveys " *European Journal of Population* 20:95-117.
- Preston, Samuel H., Patrick Heuveline, and Michel Guillot. 2001. *Demography: Measuring and modelling population processes*. Malden, MA: Blackwell Publishing.
- Raley, R. Kelly. 2001. "Increasing Fertility in Cohabiting Unions: Evidence for the Second Demographic Transition in the United States." *Demography* 38:59-66.
- Reher, David Sven. 1998. "Family ties in Western Europe: Persistent contrasts." *Population and Development Review* 24:203-234.
- Rendall, M. S., Clarke, L., Peters, E., Ranjit, N., and Verropolou, G. 1999. "Incomplete reporting of men's fertility in the United States and Britain: A

- research note." *Demography* 36:135 – 144.
- Rindfuss, Ronald R. and Audrey VandenHeuvel 1990. "Cohabitation: A Precursor to Marriage or an Alternative to Being Single? ." *Population and Development Review* 16:703-726
- Seltzer, Judith. A. 2000. "Families formed outside of marriage." *Journal of Marriage and Family* 62:1247-1268.
- Smock, Pamela J. . 2000. "Cohabitation in the United States: an appraisal of research themes, findings, and implications." *Annual Review of Sociology* 26:1-20.
- Sobotka, Thomas, and Laurent Toulemon. 2008. "Overview Chapter 4: Changing family and partnership behavior: Common trends and persistent diversity across Euorope." *Demographic Research* 19:85-138.
- Steele, Fiona, Heather Joshi, Constantinos Kallis and Harvey Goldstein. 2005. "Changing compatibility of cohabitation and childbearing between young British women born in 1958 and 1970." *Population Studies* 60:137-152.
- Teachman, Jay D., Jeffrey Thomas and Kathleen Paasch. 1991. "Legal Status and the Stability of Coresidential Unions." *Demography* 28:571-586
- Teachman, Jay D. 2003. "Childhood living arrangements and the formation of coresidential unions." *Journal of Marriage and Family* 65:507-524.
- Teitler, Julien O., Nancy E. Reichman, Heather Koball. 2006. "Contemporaneous Versus Retrospective Reports of Cohabitation in the Fragile Families Survey." *Journal of Marriage and Family* 68:469-477.
- Thornton, Arland, William G. Axinn, and Jay D. Teachman. 1995. "The influence of school enrollment and accumulation on cohabitation and marriage in early adulthood." *American Sociological Review* 60:762-774.
- Upchurch, Dawn M., Lee A. Lillard, Constantijn W. A. Panis. 2002. "Nonmarital

- childbearing: Influences of education, marriage, and fertility." *Demography* 39:311-329.
- van de Kaa, Dirk. 2001. "Postmodern fertility preferences: From changing value orientation to new behavior." *Global fertility transition. Supplement to Population and Development Review* 27:290-338.
- Villeneuve-Gokalp, Catherine. 1991. "From Marriage to Informal Union: Recent Changes in the Behaviour of French Couples " *Population: An English Selection* 3:81-111
- Wu, Lawrence and Kelly Musick. 2008. "Stability of marital and cohabiting unions following a first birth." *Population Research and Policy Review* 27:713-727.
- Xie, Yu, James M. Raymo, Kimberly Goyette, and Arland Thornton. 2003. "Economic potential and entry into marriage and cohabitation." *Demography* 40:351-367.

Figure 1. Stylized model of union change throughout the childbearing process

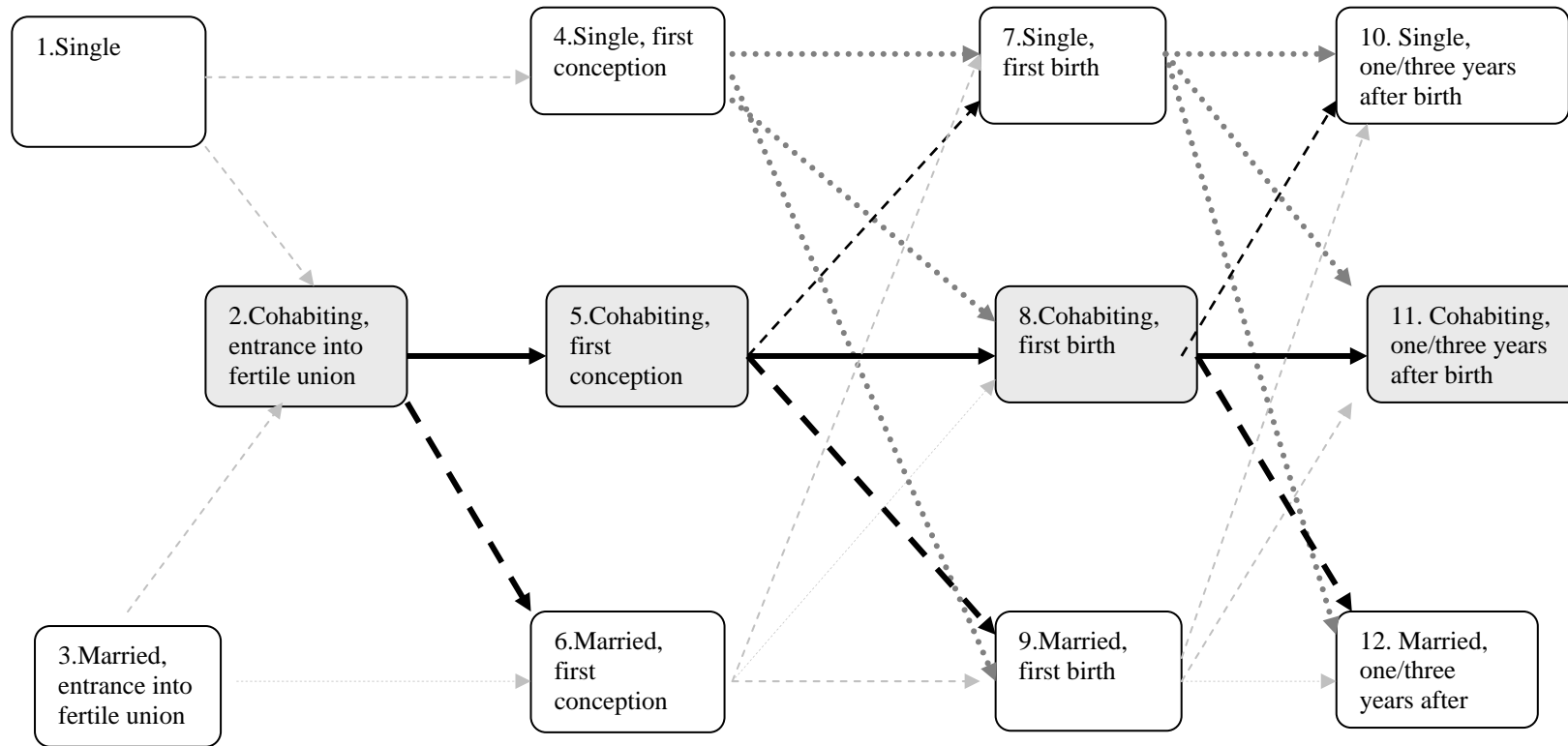


Table 1. Percent of first births and first conceptions by union status

	First conceptions *			First births			<i>N women</i>
	Cohabiting	Married	Single	Cohabiting	Married	Single	
Austria							
1985-94 (FFS)	29	42	29	23	61	16	1110
1995-04 (GGS)	45	38	17	38	53	9	762
Bulgaria							
1975-84	19	59	22	6	88	6	1038
1985-94	23	52	25	10	84	6	1565
1995-04	33	41	26	22	70	8	1072
France							
1975-84	19	65	16	12	80	8	728
1985-94	36	53	11	31	61	8	758
1995-05	47	44	9	46	49	5	750
Germany (cohorts 1971-73)							
W. Germany	36	44	20	29	60	11	1394
E. Germany	46	21	33	46	32	22	319
Hungary							
1975-84	4	67	29	3	91	6	1101
1985-94	13	62	25	7	87	6	796
1995-01	22	55	23	18	78	4	565
Italy							
1975-84	2	78	20	2	94	4	2914
1985-94	5	78	17	4	91	5	2397
1995-03	9	76	15	9	86	5	2042
Norway							
1975-84	29	46	25	20	67	13	956
1985-94	47	38	15	42	48	10	1196
1995-05	55	36	9	54	40	5	1128
Netherlands							
1975-84	7	84	9	3	93	4	732
1985-94	15	73	12	8	82	10	795
1995-03	30	59	11	26	66	8	733
Romania							
1975-84	9	73	18	7	87	6	1000
1985-94	11	73	16	8	89	3	982
1995-05	15	72	13	12	84	4	682
Russia							
1975-84	14	58	28	7	83	10	1328
1985-94	19	52	29	11	77	12	1259
1995-04	29	43	28	17	68	15	828
UK							
1975-84	4	77	19	4	89	7	667
1985-94	18	59	23	15	68	17	841
1995-05	24	47	29	29	53	18	949

Note: *Period classification refers to year of birth. Weights were applied if available.

Table 2. The probability of remaining within cohabitation based on cumulative incidence curves for all women who had a first birth within a union.

	Start of Union	Conception	First birth	1 year after birth	3 years after birth
Norway 1975-84	64	40	23	17	16
1985-94	84	56	46	35	24
1995-2003	90	61	56	49	35
France 1975-84	47	22	12	10	9
1985-94	74	40	33	28	24
1995-2005	90	51	47	41	33
Austria 1985-94	78	41	23	19	12
Austria 1995-2004	88	55	38	30	23
Netherlands 1975-84	27	7	3	2	2
1985-94	51	17	8	7	6
1995-2003	78	33	26	25	22
UK 1975-84	18	5	2	1	1
1985-94	54	24	13	11	8
1995-2005	75	34	26	22	15
W. Germ. (1971-73)	78	45	28	23	18
E. Germ. (1971-73)	92	68	57	48	37
Bulgaria 1975-84	62	24	6	5	3
1985-94	67	31	10	8	6
1995-2004	77	45	24	21	20
Russia 1975-84	27	19	9	6	3
1985-94	38	26	12	8	6
1995-2004	57	40	18	13	8
Hungary 1975-84	9	5	3	2	2
1985-94	25	17	8	6	5
1995-2001	46	28	18	17	15
Romania 1975-84	18	10	7	5	4
1985-94	23	13	7	5	3
1995-2005	29	18	12	9	7
Italy 1975-84	4	3	2	2	2
1985-94	9	6	4	2	1
1995-2003	18	10	8	7	4

Note: Respondents who were already married at the start of union were assigned an arbitrary low duration (of 0.001). This allowed us to include women who directly married into the study population. Cells with more than one-third of women remaining in cohabitation are shaded grey. Weights were applied if available.

Table 3. The percent of women in each stage conditional on the percent of women in the previous stage, and the total percent of women who started union with cohabitation and stayed in cohabitation up to three years after birth. Based on the cumulative incidence curves for all women who had a first birth in a union shown on table 2.

	Probability of remaining in cohabitation conditional on reaching the previous stage				Percent who started union with cohabitation and stayed in union up to 3 years after birth
	Conception	First birth	1 year after birth	3 years after birth	
Norway 1975-84	0.63	0.58	0.74	0.94	0.25
1985-94	0.67	0.82	0.76	0.69	0.29
1995-2003	0.68	0.92	0.88	0.71	0.39
France 1975-84	0.47	0.55	0.83	0.90	0.19
1985-94	0.54	0.83	0.85	0.86	0.33
1995-2005	0.57	0.92	0.87	0.80	0.37
Austria 1985-94	0.53	0.57	0.81	0.62	0.15
1995-2004	0.62	0.69	0.80	0.78	0.27
Netherlands 1975-84	0.26	0.43	0.67	1.00	0.07
1985-94	0.33	0.47	0.88	0.86	0.12
1995-2003	0.42	0.79	0.96	0.88	0.28
UK 1975-84	0.28	0.40	0.50	1.00	0.06
1985-94	0.44	0.54	0.85	0.73	0.15
1995-2005	0.45	0.76	0.85	0.68	0.20
Western Germany	0.58	0.63	0.83	0.75	0.23
Eastern Germany	0.74	0.83	0.84	0.77	0.40
Bulgaria 1975-84	0.39	0.25	0.83	0.60	0.05
1985-94	0.46	0.32	0.80	0.75	0.09
1995-2004	0.58	0.53	0.88	0.95	0.26
Russia 1975-84	0.70	0.47	0.67	0.50	0.11
1985-94	0.68	0.46	0.67	0.75	0.16
1995-2004	0.70	0.45	0.72	0.62	0.14
Hungary 1975-84	0.56	0.60	0.67	1.00	0.22
1985-94	0.68	0.47	0.75	0.83	0.20
1995-2001	0.61	0.64	0.94	0.88	0.33
Romania 1975-84	0.56	0.70	0.71	0.80	0.22
1985-94	0.57	0.54	0.71	0.60	0.13
1995-2005	0.62	0.67	0.75	0.78	0.24
Italy 1975-84	0.75	0.67	1.00	1.00	0.50
1985-94	0.67	0.67	0.50	0.50	0.11
1995-2003	0.56	0.80	0.88	0.57	0.22

Note: Weights were applied if available.

Table 4. Union status at each stage for women whose first conception occurred within cohabitation. Estimates based on cumulative incidence curves.

	First birth	1 year after birth	3 years after birth
Norway 1975-84 Cohabiting	58	43	36
Married	42	55	59
Separated	0	2	5
Norway 1985-94 Cohabiting	80	62	43
Married	19	34	47
Separated	1	4	10
Norway 1995-2003 Cohabiting	93	80	57
Married	6	15	32
Separated	1	5	11
France 1975-84 Cohabiting	55	47	39
Married	44	49	56
Separated	1	4	4
France 1985-94 Cohabiting	80	70	58
Married	19	26	36
Separated	1	4	6
France 1995-2005 Cohabiting	91	81	65
Married	9	17	30
Separated	1	2	5
Austria 1985-94 Cohabiting	57	46	30
Married	42	50	62
Separated	1	4	9
Austria 1995-2004 Cohabiting	69	55	43
Married	30	40	49
Separated	1	5	8
Netherlands 1975-84 Cohabiting	38	24	17
Married	59	73	76
Separated	3	3	6
Netherlands 1985-94 Cohabiting	50	44	36
Married	45	50	58
Separated	5	6	6
Netherlands 1995-2003 Cohabiting	81	75	67
Married	19	23	29
Separated	2	2	4
UK 1975-84 Cohabiting	34	18	10
Married	66	80	88
Separated	2	2	2
UK 1985-94 Cohabiting	65	51	32
Married	35	35	46
Separated	6	14	23
UK 1995-2005 Cohabiting	78	67	46
Married	22	28	44
Separated	1	5	11
W Germany (1971-73), Cohabiting	64	54	41
Married	33	40	48
Separated	3	6	11
E Germany (1971-73), Cohabiting	82	69	55
Married	15	25	36
Separated	3	5	10
Bulgaria 1975-84 Cohabiting	23	19	12
Married	77	81	87

Separated	1	1	1
Bulgaria 1985-94 Cohabiting	32	23	20
Married	67	74	77
Separated	1	3	3
Bulgaria 1995-2004 Cohabiting	53	47	44
Married	45	50	52
Separated	1	3	4
Russia 1975-84 Cohabiting	45	31	21
Married	49	57	64
Separated	6	12	15
Russia 1985-94 Cohabiting	45	31	24
Married	48	57	61
Separated	7	11	15
Russia 1995-2004 Cohabiting	45	34	16
Married	47	53	57
Separated	7	13	27
Hungary 1975-84 Cohabiting	64	50	34
Married	33	38	45
Separated	3	12	21
Hungary 1985-94 Cohabiting	50	40	33
Married	46	50	55
Separated	4	11	11
Hungary 1995-2001 Cohabiting	64	62	55
Married	36	37	40
Separated	0	1	5
Romania 1975-84 Cohabiting	66	47	38
Married	33	51	60
Separated	1	2	2
Romania 1985-94 Cohabiting	51	35	24
Married	43	55	61
Separated	5	10	14
Romania 1995-2005 Cohabiting	63	51	40
Married	34	45	53
Separated	3	4	7
Italy 1975-84 Cohabiting	67	61	57
Married	30	35	39
Separated	3	4	4
Italy 1985-94 Cohabiting	65	48	37
Married	32	42	53
Separated	3	10	10
Italy 1995-2003 Cohabiting	76	61	45
Married	24	36	47
Separated	1	4	8

Note: 100% of conceptions occurred within cohabitation

Table 5. Union status at each stage for women who were single at first conception. Estimates based on cumulative incidence curves.

	First birth	1 year after birth	3 years after birth
Western Germany, Single	46	37	27
Cohabiting	35	44	52
Married	18	20	21
Eastern Germany, Single	64	54	42
Cohabiting	31	40	50
Married	5	6	9
UK 1975-84 Single	35	25	17
Cohabiting	15	22	25
Married	50	53	58
UK 1985-94 Single	65	49	38
Cohabiting	20	32	42
Married	15	19	20
UK 1995-2005 Single	59	43	29
Cohabiting	37	49	58
Married	4	8	13
Russia 1975-84 Single	30	26	22
Cohabiting	8	9	11
Married	62	65	67
Russia 1985-94 Single	34	26	22
Cohabiting	17	20	22
Married	49	54	56
Russia 1995-2004 Single	46	41	38
Cohabiting	19	23	26
Married	35	36	36
Austria (FFS), Single	46	37	27
Cohabiting	35	44	52
Married	18	20	21
Austria (GGS), Single	64	54	42
Cohabiting	31	40	50
Married	5	6	9
Bulgaria 1975-84 Single	28	23	19
Cohabiting	27	30	32
Married	45	47	49
Bulgaria 1985-94 Single	22	16	15
Cohabiting	39	43	43
Married	39	41	42
Bulgaria 1995-2004 Single	29	26	23
Cohabiting	42	45	47
Married	29	29	30
Netherlands 1975-84 Single	41	34	28
Cohabiting	13	16	22
Married	46	50	50
Netherlands 1985-94 Single	73	64	55
Cohabiting	12	19	24
Married	15	17	21
Netherlands 1995-2003 Single	68	62	54
Cohabiting	24	30	38
Married	8	8	8
France 1975-84 Single	47	37	26

Cohabiting	16	23	31
Married	37	40	43
France 1985-94 Single	58	43	38
Cohabiting	28	42	44
Married	14	15	18
France 1995-2005 Single	53	43	27
Cohabiting	43	52	64
Married	4	5	9
Norway 1975-84 Single	31	23	16
Cohabiting	32	38	43
Married	37	39	41
Norway 1985-94 Single	42	30	24
Cohabiting	47	58	63
Married	11	12	13
Norway 1995-2003 Single	40	31	17
Cohabiting	48	57	69
Married	12	12	14
Hungary 1975-84 Single	19	15	10
Cohabiting	3	4	6
Married	78	81	84
Hungary 1985-94 Single	20	15	9
Cohabiting	6	8	11
Married	74	77	80
Hungary 1995-2001 Single	15	12	7
Cohabiting	20	21	24
Married	65	67	69
Romania 1975-84 Single	32	25	19
Cohabiting	11	12	12
Married	57	63	69
Romania 1985-94 Single	18	15	10
Cohabiting	16	17	18
Married	66	68	72
Romania 1995-2005 Single	29	18	17
Cohabiting	23	30	31
Married	48	52	52
Italy 1975-84 Single	17	9	8
Cohabiting	3	4	4
Married	80	87	88
Italy 1985-94 Single	26	17	13
Cohabiting	6	8	9
Married	68	75	78
Italy 1995-2003 Single	31	22	19
Cohabiting	17	21	23
Married	52	57	58

Note: 100% of conceptions occurred while single.

Endnotes

ⁱ Some women may directly exit cohabitation and enter new unions, but these cases are relatively rare in our data

ⁱⁱ Registered unions, or PACS, are recorded in the French GGS, but we include them with marriages; Fewer than 1% of first marriages are registered unions.

ⁱⁱⁱ Surveys may be inaccurate for a number of reasons. For example, in the Russian GGS response rates in Moscow and St. Petersburg –the largest urban areas in Russia – were very low, meaning that the survey may be representative only of the rest of Russia (Houle and Shkolnikov 2005). The BHPS data has limited information on start dates of some unions, which if non-random could potentially introduce sample selection bias. The Austrian GGS only interviewed women aged 18-45, and the German PAIRFAM data included only three cohorts, thus restricting analyses over time.