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Cohort change in Italy, Great Britain, and Scandinavia

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Abstract: In this paper, we investigate through microsimulation the link between (1) increases in cohabiting first births; (2) shifting differentials in separation rates for parents who are cohabiting versus married at first birth; and (3) cohort change in overall rates of parental separation. Analyses are based on representative surveys in Italy, Great Britain and Scandinavia (represented by Norway and Sweden). We use the hypothetical populations to decompose changes in parental separation across maternal birth cohorts (1940s to 1950s, 1950s to 1960s, 1960s to 1970s), identifying how much of the change can be attributed to shifts in union status at first birth and how much to change in separation rates for each union type. When cohabiting births were uncommon, increases in parental separation were driven by increases in parental divorce. When cohabiting parenthood became more visible, it also became a larger component, but continued increases in parental divorce also contributed to increasing parental separation rates. When cohabiting births became quite common, the higher separation rates of cohabiting couples begin to play a greater role than marital divorce. When most couples had their first birth in cohabitation, those having children in marriage were increasingly selected from the most stable relationships and their decreasing divorce rates offset the fact that increasing proportions of children were born in somewhat less stable cohabiting unions.

Keywords: cohabitation, marriage, separation, divorce, cohort

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INTRODUCTION

Since the mid-20th century, intimate partnerships in affluent societies have undergone dramatic changes. Couples increasingly begin their union in non-marital cohabitation, and whether or not they marry are increasingly likely to separate (Andersson and Philipov 2002; Sobotka 2008; Andersson et al. 2017). In a context of lengthy transitions to economic independence and highly effective contraception, cohabitation offers convenient intimacy without a long-term commitment. It also offers a more rigorous test than steady dating for the stronger commitment of marriage. Because many relationships fail the test, rates of separation among cohabiters are much higher than rates of divorce (Raley & Bumpass 2003; Liefbroer & Dourleijn 2006; Kennedy & Ruggles 2013).

Gradually, cohabitation has become an acceptable context for childbearing (Bumpass and Lu 2000; Perelli-Harris et al. 2010; Thomson and Eriksson 2013; Musick and Michelmore 2015). We might expect that parenthood represents or generates a stronger commitment to the partner relationship. Parents' commitment to the child is life-long and might even be viewed as stronger than the commitment of marriage *per se*. At the micro-level, however, the evidence is clear that cohabiting parents are more likely to separate than married parents are to divorce (Andersson and Philipov 2002; Heuveline et al. 2003; Thomson and Eriksson 2013; Andersson et al. 2017). At the macro-level, increases in cohabiting births parallel those of parental separation rates (Thomson and Eriksson 2013). The consistency between the micro- and macro-associations suggests that increased numbers of cohabiting parents are responsible for increases in parental separation.

In an alternative scenario, cohabitation at parenthood is simply a marker of the union's unobserved stability – less stable couples have children in cohabitation, more stable couples have children in marriage. Thus, any increases in overall parental separation arising from cohabiting parents could be offset by decreases in divorce among married parents. As more people have children in cohabitation, the difference in separation rates between cohabiting and married parents would decline because cohabitation becomes a weaker indicator of the unobserved stability. In contrast with the previous scenario, overall increases in parental separation may arise from a combination of increases in cohabiting parents' separation and married parents' divorce.

In this paper, we investigate through microsimulation the link between (1) increases in cohabiting first births; (2) shifting differentials in separation rates for parents who are

cohabiting versus married at first birth; and (3) cohort change in overall rates of parental separation. We estimate parameters predicting union and birth transitions from the intersection of a mother's prior childbearing and union history, as observed in nationally representative surveys in Italy, Great Britain and Scandinavia (represented by Norway and Sweden). Those parameters are used to generate hypothetical populations with the predicted family life trajectories for each country and cohort. The microsimulation allows us to include predictions for younger cohorts whose family life trajectories are not yet fully observed. We then use the hypothetical populations to decompose changes in parental separation across maternal birth cohorts, identifying how much of the change can be attributed to shifts in union status at first birth and how much to change in separation rates for each union type. We compare results for national contexts with quite different levels and shifts over time in parental cohabitation and separation.

COHABITATION AND UNION INSTABILITY IN THEORY AND RESEARCH

Before the middle of the 20th century, the state, communities and families maintained a strong interest in the sexual behavior of adolescents and young adults. In the context of an increasingly individualistic society, a primary rationale for sexual control was to protect the interests of children -- to ensure that pregnancies and births occurred in stable heterosexual relationships so that children had access to the resources of two parents and their extended kin. When sexual relationships and pregnancies occurred outside marriage, the prospective parents were usually pressured to marry.

In the 1960s and 1970s, the advent of hormonal contraception offered a dramatically decreased risk of pregnancy. In addition, more years of study or apprenticeship were required for young adults to become economically self-sufficient prior to marriage and parenthood. Rather than remain sexually abstinent – as did previous generations – young people were able to have sex when they wanted with little risk of pregnancy. A natural extension of a steady sexual relationship, likely headed toward marriage, was simply to live together.

Cohabitation has other advantages in relation to marriage that likely precipitated its rise. First, cohabiting partners need not make any legal commitments to one another. In a period of rising divorce rates, couples may be more sensitive to the potential instability of relationships; cohabitation enables them to put the relationship to a stronger test than dating before making the commitment of marriage (Bumpass 1990; Perelli-Harris et al. 2017).

Furthermore, cohabiting partners avoid economic obligations to each other that the state imposes on married couples. The lower level of commitment required for cohabitation and the opportunity to test the relationship are commonly offered as justifications for its choice (Perelli-Harris et al. 2014; Perelli-Harris and Bernardi 2015).

The corollary of these advantages is that cohabitations will be less stable than marriages (Liefbroer & Dourleijn 2006). Many relationships put to the test of cohabitation will fail, and those that pass the test to become marriages will exhibit a higher level of commitment (Brown 2004). Thus, the population of cohabiters will always include more couples prone to separate than the population of married couples.

It is not obvious, however, that the parents who cohabit should be more likely to separate than parents who have married. Parenthood generates a commitment of economic, social, and emotional resources to a common child. Poortman and Mills (2012) argue that relationship commitment -- whether through marriage or not – precedes partners' willingness to undertake the structural and moral commitments of parenthood. Shared responsibilities to children also make the process of dissolution much more difficult and perhaps equal to the difficulties of divorce (Perelli-Harris & Sánchez Gassen 2012; Sánchez Gassen & Perelli-Harris 2015; Perelli-Harris et al. forthcoming). In contexts where a high proportion of first births occur in cohabitation, parenthood may have become equivalent to marriage as a signal of commitment to the partner relationship (Perelli-Harris & Bernardi 2015).

Despite the commitments associated with parenthood, cohabiting parents are more likely to separate than are married parents (e.g., Andersson and Philipov 2002; Heuveline et al. 2003; Andersson et al. 2017). The gap is generally smaller where and when cohabitating births are more common (Clarke & Jensen 2004; Schnor 2014; Pelletier 2016; Andersson et al. 2017 but see Jensen & Clausen 2003), consistent with a scenario in which cohabitating parenthood becomes normative and thereby a weaker signal of unobserved union stability. Parents who marry shortly after their first birth appear to have substantially reduced risk of separation (i.e., divorce) that may be no greater than that of parents married prior to birth (Le Bourdais & Lapierre-Adamcyk 2004; Manning et al. 2004; Wu and Musick 2008; Rackin and Gibson-Davis 2012; Musick & Michelmore 2015; 2017). This finding suggests a further selection of the most stable relationships into marriage around the time of their transition to parenthood.

What remains unclear is whether cohabitation is an "engine" of parental separation,

i.e., whether parental separation would have increased to the same extent in the absence of cohabiting parenthood. Part of the answer to this question is the extent to which cohabitation draws from a pool of persons who would otherwise marry, rather than from a pool of persons who would otherwise remain single. Some couples appear to "slide into" cohabitation (Sassler 2004; Manning & Smock 2005); if cohabitation were not available, they would not likely have married in order to live together. It is possible that cohabiting couples also "slide into" parenthood, i.e., have children they might not have had were they to remain single. In the U.S., cohabiters are more likely than married couples to have unplanned pregnancies and births (Hayford & Guzzo 2010; Lichter et al. 2016), both of which are associated with higher rates of separation and divorce (Guzzo & Hayford 2012; Lichter et al. 2016). At the aggregate level, the proportion of births out of marriage (predominantly births in cohabitation) is associated with higher fertility (Sobotka & Toulemon 2008), consistent with a scenario in which cohabitation produces births that might not otherwise occur.

Statistics on divorce rates among parents are not generally available, making it impossible to document associations between the proportion of births in cohabitation and parental divorce across time and place. Births out of marriage – most of which are in cohabitation when cohabitation is common – show similar patterns of variation across time and place as does divorce (Lesthaeghe 2010; Sobotka and Toulemon 2008). Life table estimates of parental separation (including divorce) are generally higher in countries with higher rates of cohabiting births (Andersson and Philipov 2002; Andersson et al. 2017), suggesting that the micro-level association between parental cohabitation and separation may produce the same association at the macro-level. Thomson and Eriksson (2013) provide direct evidence of the macro-level association for Sweden, i.e., parallel trends in cohabiting births and parental separation from 1960 to 2007.

Attempts to quantify the contribution of cohabitation to union stability at the population level are relatively scarce, and with one exception are limited to the United States. Goldstein (1999) decomposed U.S. divorce rates by age at marriage (strongly linked to cohabitation), education, and marriage order to show that compositional changes could not explain the leveling of divorce after 1990. He also estimated the contribution of cohabitation by first estimating the proportion of couples who cohabited instead of marrying, and then specifying their "divorce" rate as equal to or at two higher levels than observed rates for married couples. Had the cohabiting couples married and divorced at that the highest rate,

divorce rates would have continued to rise instead of stabilizing.

Rotz (2016) argued that the rise in age at marriage after 1970 was "the main proximate cause of the fall in divorce rates." The fact that increases in age at marriage were almost fully accounted for by cohabitation (Bumpass et al. 1991; Manning et al. 2014) suggests that cohabitation is the underlying explanation. That is, shifts in age at marriage were simply the predetermined outcome of cohabitation -- the least committed unions were selected out of marriage and those that survived the test married at a later age.

Using new data from the American Community Survey and controlling for shifts in ages of the married population, Kennedy and Ruggles (2014) found that divorce rates had in fact increased for those over 35, while stabilizing or declining at younger ages. They speculate that the latter finding reflects the replacement of less stable marriages by cohabitation. They point out, however, that overall separation rates would increase because cohabiting unions are less stable than marriages (Kennedy and Ruggles 2013; Raley and Bumpass 2003).

None of these analyses focus on the stability of parental unions, which we argue are of a different character in terms of commitment and stability than childless unions. Two recent studies have quantified the contribution of cohabiting births to parental separation. Musick and Michelmore (2015) estimated models of parental separation for U.S. first births, 1985-1995 and 1996-2000, when cohabiting births increased from 17% to 35%. They simulated the contribution of cohabiting births to parental separation by holding constant in the hazard model the characteristics of cohabiting and married parents in the earlier period. Shifts in the overall predicted separation probabilities were negligible; 16% of parents were observed to separate in the later survey, while 15% would have been predicted to separate without the increase in cohabiting births. A similar analysis found on the other hand that a substantial proportion of cross-national variation in parental separation could be accounted for by cross-national variation in union status at birth (Musick and Michelmore forthcoming). The study estimates national differences for the most recent historical period rather than change over time in parental separation.

In this paper, we investigate further the micro-level processes that link childbearing in cohabitation to parental separation across time and place. We use retrospective information on birth and union histories to generate parameters linking birth and union transitions. The estimated parameters are used to simulate family life trajectories, which allows us to also

include family life trajectories for cohorts that cannot be fully observed or for which observed birth and union combinations would be too few for analysis. Using the simulated family life trajectories, we decompose increases in parental separation into increases associated with changes in composition (union status at birth) and overall increases in separation rates. We further investigate the degree to which shifts in separation rates for those cohabiting or married at first birth contribute to increases in overall parental separation. In line with the approach taken by Thomson and colleagues (2012) to study the relationship between union stability and fertility, our models and simulation focus on the demographic components of parental separation, ignoring the distal common causes of union formation, union dissolution, and births.

DATA

We consider three societal contexts with different levels and histories of cohabiting parenthood and parental separation. In Italy, almost all children are born in marriage and divorce is relatively uncommon (Rosina and Fraboni 2004). In recent years, however, slight increases have been observed in non-marital childbearing and divorce (Meggiolaro and Ongaro 2010, Basten et al. 2014). In Great Britain, nonmarital childbearing, both to cohabiting couples and lone mothers, is socially accepted and separation or divorce has become common, especially for parents born after 1960 (Basten et al. 2014). Sweden and Norway have been fore-runners in cohabiting births while births to lone mothers are quite low and parental separation has not quite reached the levels observed in Great Britain (Thomson and Eriksson 2013; Andersson et al. 2017).

Our analysis is based on birth and union histories, dated by year and month. For Italy, we use the multi-purpose household surveys on "Family and Social Subjects", carried out in 2003 and 2009. The 2003 survey constitutes the Italian GGS survey, so we use the version of the histories that has been harmonised with other GGS surveys by the Nonmarital Childbearing Network (Perelli-Harris et al. 2010, see www.nonmarital.org). We made small corrections on union order in an earlier version of the Harmonized Histories, and also harmonized the 2009 data to correspond. We selected women born in Italy in 1940 or later, who had their first child or entered a partnership, if any, after age 15 (N=30,255).

Analyses for Great Britain are based on 10 datasets (2000–2009) from the Centre for Population Change GHS database 1979-2009 (see Beaujouan et al. 2014 for details) and the

2009 wave of the Understanding Society Survey. The validity of partnership histories is quite good (Berrington et al. 2011) but the birth histories have been shown to underestimate births reported in the GHS database (Ní Bhrolchaín et al. 2011). The analytic sample consists of 61,718 women born in Great Britain in 1940 or later, having their first child and entered a partnership, if at all, after age 15, as for Italy.

We combined harmonized versions of the 2007/2008 Norwegian and 2012/13 Swedish GGSs. The Norwegian histories have been validated for cohorts born since the mid-1940s (Vergauwen et al. 2015); we used Swedish administrative registers to validate a number of parameters in the simulated population (see below). Both surveys were based on random samples taken from population registers and were carried out with a combination of computer-assisted telephone interviews and postal questionnaires. Each survey had a smaller sample than for Italy or Great Britain; by combining the samples we were able to make distinctions in union and birth histories that would not have been possible with the separate samples. Differences between the two countries in birth and union behaviors are observed (e.g., Andersson et al. 2017), but are much closer than to the other countries. We applied the same selection criteria as in Italy and Great Britain, producing an analytic sample of 6,589 Norwegian-born women and 4,446 Swedish-born women for a total of 11,035 women.

METHODS

To generate simulated family life courses, we use the microsimulation model developed by Winkler-Dworak et al. (2018). First, we estimated continuous-time, competing risk hazard models of births (up to four) and union transitions (up to three). Women are observed from age 15 when childless and never in a union. Birth transitions are timed at conception, nine months prior to the reported birth. Duration dependence for conception of the first live birth or first union formation (marriage or cohabitation) is based on the woman's age (time since 15^{th} birthday). For higher-order births, duration is the age of the youngest child. Higher order (2^{nd} or 3^{rd}) union formation is dependent on time since previous union dissolution (from marriage or cohabitation). The baseline clock for converting cohabitation into marriage or separating is time since cohabitation, while the baseline clock for divorce is time since marriage. All observations are censored by the respondent's 50th birthday or by the date of survey, whichever occurs first.

Stratified models with transition-specific covariates generated estimates for the

competing risks of cohabitation and marriage and of marriage or separation of cohabiting partners, separately for first and higher-order unions. Sample weights were used to correct for the higher nonresponse rates of certain population groups (Beaujouan et al. 2011; Fokkema et al. 2016). To produce consistent estimates of parameter variances and likelihood ratios, we normalized the weights to sum to the sample size in each survey. Piecewise constant exponential models include age, birth cohort, age of youngest child, and detailed combinations of prior unions and births, including distinctions between births with previous or current partners. They also include several duration–cohort interactions with step-wise functions to represent linear splines. Model parameters were estimated by maximum likelihood as implemented in STATA 13.1 (StataCorp 2013), AIC statistics were used to select the best fitting models for each country and birth cohort. Model specifications and parameter estimates are provided in the appendix.

The model parameters for each country were the input to Modgen (Statistics Canada 2009). Microsimulation allows us to incorporate much more complex sets of transitions than can be accommodated by multistate life tables (e.g., Andersson and Philipov 2002; Andersson et al. 2017). In addition, the microsimulation enables us to estimate completed family life courses for cohorts who were still of reproductive age at the time of the survey. The microsimulations are based on the same assumptions underlying the regression models that produced the input parameters, i.e., that the processes are independent and hazard rates are constant within the best-fitting model's specified time intervals. The microsimulation produces an exponential distribution of waiting times. We randomly draw waiting times to all birth and union events for which a woman is at risk, censoring the drawing of new waiting times when the first event occurs or hazard rates change. This does not affect expected waiting times of other processes for which the hazard has not changed. Our model is a variant of the RiskPaths model (Spielauer 2009a,b).

For each country and birth cohort, 1 million synthetic family life courses (birth and union histories) were simulated. Events at later ages are based on parameters observed only for older cohorts with the same histories and in the same age group. For the most recent birth cohorts, cohort-specific rates were equated to those for the 1970–79 cohort for all higher-order processes. Although we included all cohorts in the hazard regressions, we present only simulated family life trajectories based on rates for which the underlying cohorts could be observed until at least age 30, i.e., born before 1980. We simulated the family life

trajectories for Sweden and Norway separately, from models that distinguished the main country effect and for some events (depending on model fit), a country-cohort interaction. The two simulated populations were weighted in relation to the number of women observed in each sample, and then combined to form a single Scandinavian population.

We use the mother's birth cohort as the basis for defining change in cohabiting births and parental separation. This choice is based on the fact that the underlying family life trajectories are those of mothers, not children. Were we to focus on the children, we would miss the union experiences prior to first birth that are characteristic of the population and underlie subsequent elements of shifts in family life trajectories across cohorts. The cohort approach is further motivated by the very large delay in age at first birth across the maternal birth cohorts we observe and the need to specify cohort-specific duration-dependence for first births. Furthermore, we are able to estimate complete family life courses for the younger cohorts who are not observed to age 50. Given large shifts in the timing of family events across cohorts, we would not necessarily be able to replicate observed period change in parental separation as we can do for maternal birth cohorts.

We compared estimates of several demographic parameters from the simulated populations to the observed samples. For example, combined birth and union statuses by age usually differed by less than 0.5 percentage points and only very rarely more than 2 percentage point difference between the observed samples and simulated populations. Hence, the simulations replicate the distribution of number of births and union events across age very well and due to the large simulation size also yield smooth age profiles; where counts are low in the original samples, age profiles fluctuate considerably. The close correspondence of birth and union events by age results in an almost perfect match on cumulative fertility and marriage indicators across age between the simulated and original populations.

We also compared selected demographic parameters in the simulated populations to available administrative statistics from each country. For example, the number of births by age and parity, if available, for each cohort were compared to the Human Fertility Database (2018), the Cohort Fertility and Education Database (2018), and data from national statistical offices (ISTAT 2018, U.K. Office of National Statistics 2016, National Records of Scotland 2018, Statistics Norway 2018). We conducted our own analyses of Swedish register data. Across ages, the simulated fertility indicators replicate closely those obtained from national statistics. The simulated cohort fertility is slightly lower than national statistics (particularly

for third and fourth births), consistent with our restricting the observed samples to native-born women. For further details on the validation of the microsimulation results see Winkler-Dworak et al. (2018).

From the simulated populations, we selected women who had a first birth in a cohabiting or marital union prior to age 40, and estimated the risk of separation from the father of their first child, up to age 50 or the child's age 16, whichever comes first. We compare separation probabilities for the populations that were cohabiting versus married at first birth, by cohort and country.

In order to quantify the contribution of cohabitation to parental union instability, we analyze changes across simulated maternal birth cohorts in the percent of women who separated from the father of their first child. We apply standardization and decomposition methods (Kitagawa 1955) to derive standardized rates and standardized composition values for each cohort change (1940s to 1950s, 1950s to 1960s, 1960s to 1970s), taking average cell composition and average cell rates, respectively, as weights. To simultaneously contrast multiple populations, standardization results from all pairwise combinations across populations are combined to composite standardized rates and composition values (cf. ibid., chapter 6, pp. 197ff).

Chevan and Sutherland (2009) further refine the standardization methods by providing a secondary decomposition of the standardized rates and composition values into components by variable category. Standardized parental separation rates for a category are obtained by holding constant the distribution of all variables (e.g., union context) while allowing the parental separation rates by category to vary across cohorts. Furthermore, standardized composition values for a category are obtained by holding constant the parental separation rates at the average composite rates across cohorts and the average distribution of all variables other than the variable to which the category belongs. Eventually, the difference between standardized values across populations reflects the contribution of that category to the difference in crude parental separation rates across populations.

RESULTS

The hazard estimates used to microsimulate family life trajectories are provided in the appendix (Tables A1-A9) as they are simply building blocks for the simulation and decomposition of change in parental separation. Nevertheless, it is important to state that the

estimates are consistent with previous observed associations in Italy, Great Britain, and the Scandinavian countries. Across cohorts, the risk of unmarried cohabitation increases in parallel with declining and delayed marriage and increasing separation and divorce. As is well known from previous research, the risk of cohabitation increased earliest in Norway/Sweden, followed by Great Britain, and last and to a much smaller extent, Italy. In addition, the hazard estimates confirm many well-known relationships among union formation, union dissolution and fertility. Those most relevant for our research question are that births are more likely among married women than among cohabiting women and even more so than among single women. Separation and divorce rates increase across cohorts and decrease with the woman's age. Pregnancy increases the risk of entry into cohabitation and even more the risk of marriage. Although the relative effect of pregnancy on entering cohabitation increases across cohorts, its effect on marrying declines across cohorts. Furthermore, pregnancy within cohabitation increases the risk of marriage, again diminishing across cohorts, and decreases the risk of separation. Children generally depress the risk of marriage within cohabitation, except when children are very young. At the same time, children in a partnership are associated with lower separation and divorce risks, particularly when they are very young.

Table 1 shows the resulting distribution of union status at first birth for the simulated populations of Italian, British and Scandinavian women born 1940-1979. These values are very close to those in the original samples for the older cohorts whose family life trajectories are observed throughout the reproductive ages, and differences for the younger cohorts are consistent with fact that we do not observe the births at older ages among the younger cohorts. As observational studies have shown, the percentage of births to cohabiting women is higher among younger cohorts in all three populations, but the absolute levels depend on the context. Among the Italian and Great Britain simulated 1940s birth cohort, only 1-2 percent had first births in cohabitation, compared to 13 percent in the Scandinavian countries. The youngest simulated birth cohort in the Italian population had about the same proportion of births in cohabitation as did Scandinavian women born in the 1940s, while more than a third of their simulated counterparts in Great Britain and more than 60 percent of the youngest simulated Scandinavian cohort had a first birth in cohabitation.

Table 1. Percent First Births by Union Status at Birth in Simulated Populations

	Mother's Birth Cohort				
	1940-49	1950-59	1960-69	1970-79	All Cohorts
Italy					
Cohabitation	1.2	2.5	5.1	12.1	4.8
Marriage	98.8	97.5	94.9	87.9	95.2
Great Britain					
Cohabitation	2.4	6.7	20.8	34.8	15.1
Marriage	97.6	93.3	79.2	65.2	84.9
Norway/Sweden					
Cohabitation	12.5	29.0	55.5	62.7	40.2
Marriage	87.5	71.0	44.5	37.3	59.8

Table 2 shows for each simulated population the percent of parents separating by union status at first birth and by mother's birth cohort. Again, estimates are very close to the observed separations among the older cohorts and differences for the younger cohorts are consistent with the fact that they were not observed at older ages. This holds particularly for divorce of married parents in all countries. When cohabiting first births are very rare, as in Italy, the estimated separations are slightly higher than observed rates. For the 1940s British cohort, estimates are slightly lower than observed. In the simulated populations, separation after first birth dramatically increased across the simulated birth cohorts in Italy but remained at less than half the rate in Great Britain and the Scandinavian countries. Except for the youngest cohort, separation rates were quite similar for Great Britain and the Scandinavian countries; the 1970-79 birth cohort in Great Britain had a higher separation rate than their simulated Scandinavian counterparts. In each country, as expected, separation rates are much higher for those having a first birth in cohabitation than in marriage.

Table 2. Percent First Birth Unions Ended by Union Status at Birth in Simulated Populations

	Mother's Birth Cohort				
	1940-49	1950-59	1960-69	1970-79	All Cohorts
Italy					
Cohabitation	27.2	34.0	28.9	27.8	28.9
Marriage	3.7	8.0	9.7	12.0	8.0
All births	4.0	8.6	10.7	13.9	9.0
Great Britain					
Cohabitation	34.8	38.4	49.0	57.4	51.4
Marriage	20.1	24.9	31.6	32.0	26.1
All births	20.4	25.8	35.3	40.8	29.9
Norway/Sweden					
Cohabitation	30.6	37.7	41.9	40.4	39.7
Marriage	19.6	26.1	30.2	21.8	23.9
All births	21.0	29.5	36.7	33.5	30.3

Increases in parental separation did not, however, occur only among those who were cohabiting at first birth. In the Italian simulated population, separation after a first birth in cohabitation remained quite stable across cohorts, with most of the increase found among those married at first birth. In the British simulated population, increases in separation were found among both groups of parents, as was the case in the Scandinavian population. While divorce stabilized in Great Britain for the younger cohorts, in Scandinavia stabilization was observed among cohabiting parents while divorce among the 1970s birth cohort declined and was about the same as for the 1940s cohort. In general, as the difference in separation rates increases, the compositional effects on the overall increase in parental separation should become stronger.

Initial results of the decomposition analysis are presented in Figure 1. (See Table A12 in the appendix for numerical estimates.) Data for Italy are at the far left, Great Britain in the middle, the Scandinavian countries at the far right. For each country, the black bars represent the overall change in parental separation between each pair of cohorts (1940s-50s on the left, 1950s-60s in the middle, 1960s-1970s on the right), simply the difference between the rates shown in Table 2. The dark gray bars represent the amount of change attributable to changes in union status at birth, the light gray bars represent the remaining change, i.e., that

which is attributed to an overall change in the rate of separation.

Figure 1 here

In comparison to the 1940s cohort, Italian women born in the 1950s experienced a higher rate of parental separation that was not related to shifts in union status at birth. Most of the increase was due to increases in divorce among those married at first birth (4.4 out of the total rate change of 4.6). Composition played some role in parental separation increases for the 1960s cohort (0.6 out of 2.1) and a larger role for the 1970s cohort (1.3 out of 3.2).

In the British population, the share of first births in cohabitation increased by only 4.4 percentage points (from 2.5% to 6.8% of all parental unions, Table 1) from the 1940s to the 1950s cohort. The overall effect of the shift accounted for only one sixth of the increase in parental separation for the 1950s cohort (0.8 of 5.4). The dramatic increase in cohabiting first births for the 1960s cohort (20.8%) contributed to about a quarter of the increase in parental separation (2.3 of 9.4). For the 1970s cohort, the increase in cohabiting first births accounted for more than half of the further increase in parental separation (3.2 of 5.6).

In the Scandinavian population, cohabitating births increased dramatically across cohorts, slowing down only between the two younger cohorts. Compositional effects played a larger role in the growth of parental separation for the earlier cohorts in comparison to the Italian and British populations, consistent with the higher levels of births in cohabitation among the older Scandinavian cohorts. About a quarter of the increase for the 1950s cohort (2.0 of 8.5) and about half of the increase for the 1960s cohort (3.3 of 7.2) could be attributed to the increase in cohabiting first births. Increases in cohabiting births continued to contribute positively to parental separation for the 1970s cohort, but a sharp drop in the separation rate more than compensated so that the overall separation rate declined.

For all three simulated populations, the increase in parental separation was generally due more to increases in separation rates and less to shifts in composition of union status at first birth. Between the most recent cohorts, the compositional effect rose in Italy, surpassed the overall rate effect in Great Britain and decreased as well as being offset by declining separation rates in Scandinavia.

The decomposition analysis also estimates contributions of change in each union status and change in their respective rates of separation to the overall change in parental

separation (see appendix, Table A12). In Figure 2 we present a selection of these results, showing the detail of changes that reflect the "take-off" of cohabiting births in each country. This is the point when we might expect compositional effects to be large, if the difference in separation rates for married and cohabiting parents is relatively stable. Compositional effects could also be large if the "take-off" cohorts generated a larger difference in separation rates for cohabiting and married parents. For Italy (left), we present the decomposition for increases in parental separation between the youngest two cohorts, for Great Britain changes between the middle two cohorts, and for Scandinavia, changes between the older two cohorts.

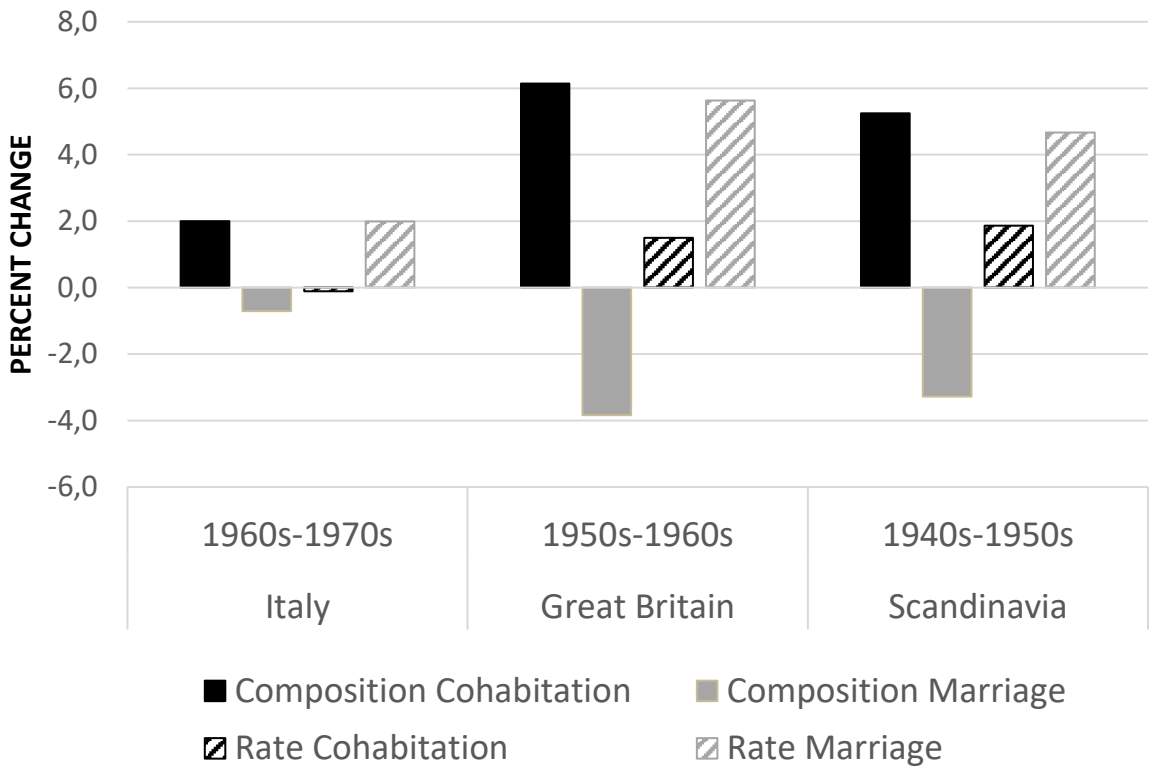

Fig. 2 Contributions to Cohort Change in Parental Separation: Italy 1960s-1970s, Great Britain 1950s-1960s and Scandinavia 1940s-1950s

First, because the union statuses are mutually exclusive, the contributions of each are in opposing directions, cohabitation contributing to increases in separation, marriage to decreases (given that parents cohabitating at first birth have higher separation rates than those married at birth). The difference between the two bars in absolute terms is the amount of change in total that is attributable to changes in union status at birth. This is not true for

changes in rates of separation when first births occur in cohabitation or marriage. Both may contribute to increases or decreases or they may contribute in different directions to changes in the overall parental separation rate.

For the ”take-off” cohorts, i.e. the youngest Italian cohorts, the middle British cohorts and the oldest Scandinavian cohorts, the patterns are very similar. The shift from marital to cohabiting first births contributed considerably to increases in separation – as discussed above, 2.0 out of 3.2 for the youngest Italian cohorts, 2.3 out of 9.4 for the middle British cohorts, and 2.0 out of 8.5 for the oldest Scandinavian cohorts. The larger part of the increase in parental separation for the cohabiting pioneers in each country was due, however, to increases in parental divorce.

Selecting a second set of results, we contrast the contributions of composition and separation rates to the increase or decrease in parental separation for the younger two cohorts born in the 1960s and the 1970s in each country. Figure 3 shows, at the left, the same pattern as described for Italy in Figure 2; about 40 percent of the overall increase in parental separation can be attributed to the shift from marital to cohabiting first births, the rest to increases in parental divorce. In Great Britain, the increase is also split between the shift to cohabiting first births and increasing rates of separation, but here it is the increase in separation among parents cohabiting at birth rather than divorce of married parents that generated much of the overall increase in parental separation. In Scandinavia, the overall separation rate declined, due in large part to a decline in parental divorce and a smaller decline in separation of parents who were cohabiting at first birth. The fact that the proportion of births in cohabitation continued to increase offset somewhat the contribution of declining rates of separation for both groups of parents.

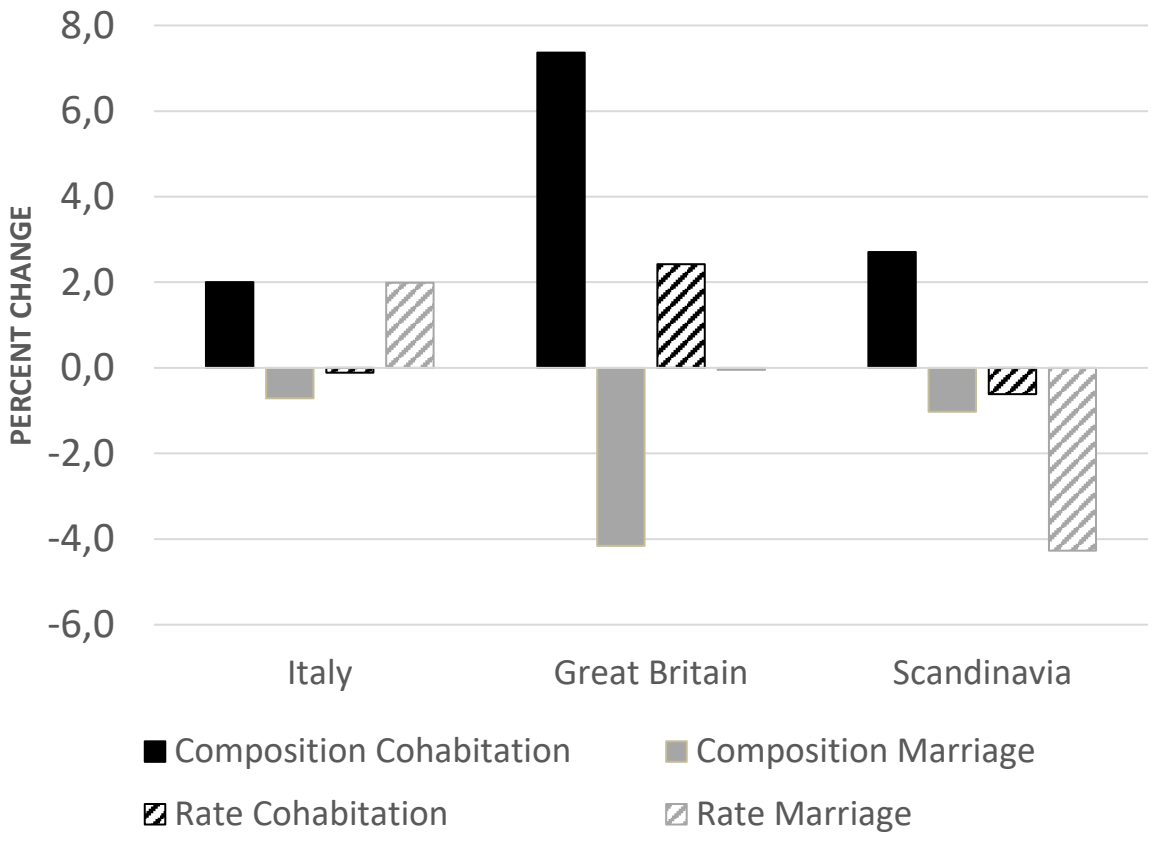

Fig. 3 Contributions to Cohort Change (1960s-1970s) in Parental Separation: Union Composition and Separation Rates

CONCLUSIONS AND DISCUSSION

We began our investigation of cohabitation and parental separation with two alternative scenarios. In the first scenario, cohabitation is a less stable form of union than marriage, so that the more births in cohabitation, the greater the risk of parental separation overall. If all parents married, parental separation would not increase. The opposing scenario is that as cohabiting parenthood becomes more common, the cohabiting parents are drawn from an increasingly stable set of couple relationships; thus, separation rates among cohabiters decline and become more similar to divorce rates among married parents. The result is that parental separation remains relatively stable. If separation increases, it must be due to increases in separation not only of cohabiting parents but also of married parents. In our simulated populations, we found that the role of cohabitation in parental separation is somewhere in between and that changes in the stability of marital unions also played a significant role.

By simulating three populations with different histories and levels of births in cohabitation, we were able to identify shifts in the contribution of cohabitation to parental separation as cohabiting parenthood dramatically increased. When cohabiting births were under 10 percent (Italy until for cohorts born before 1970, Great Britain for cohorts born before 1960), the shift of births from marriage to cohabitation was less important for increasing parental separation than the increase in divorce among married parents. For cohorts experiencing dramatic increases in cohabiting parenthood (1940s-50s in Scandinavia, 1950s-60s in Great Britain and 1960s-70s in Italy), the status of parental unions at birth accounted for one third to one half of the increase in parental separation. For the youngest Italian cohort, where cohabiting births had reached only 12%, parental divorce continued to increase and generated a large share of the increase in parental separation overall. In Great Britain, parental divorce leveled off while separation rates among cohabiting parents increased. Thus, both the higher number of cohabiting parents and their increasing rates of separation generated very large increases in parental separation overall. In Scandinavia, cohabiting parents' separation rates decreased, but not nearly as much as divorce rates among the married parents. Even though cohabiting births continued to increase, they had smaller impacts on the overall separation rate.

Viewing the maternal cohorts across countries as a single continuum leads to the following scenario for the contributions of cohabitation to parental separation. Cohabitation and union instability are two components of the change in intimate relationships driven by changing social and economic conditions for family life. When both phenomena emerge, as between the 1940s and 1950s Italian cohorts, parental separation is driven as much or more by divorce of the more conventional married parents as by the instability of the rare couples who do not marry before birth. When cohabiting parenthood becomes more visible, say 10-30% of births (Italy 1970s cohort, Great Britain 1960s cohort, Scandinavia 1940s and 1950s cohorts), cohabiting parenthood becomes a larger component of the equation, but continued increases in parental divorce also contribute to increasing parental separation rates. When cohabiting births exceed 30% (Great Britain 1970s cohorts, Scandinavia 1960s cohort) the higher separation rates of cohabiting couples begin to play a greater role than marital divorce. When most couples have their first birth in cohabitation (Scandinavia 1970s cohort) couples having children in marriage are increasingly selected from the most stable relationships and their decreasing divorce rates offset the combination of high proportions of less stable

cohabiting unions.

Such a scenario suggests that cohabiting parenthood is something different when it is rare than when it is the norm. Certainly, the more people who engage in a new behavior, the less different they are from those who do not. If the primary difference between cohabiting and married parents is the quality of their relationship or their long-term commitment to raise children together, we would expect the relative separation rates to decline as more people have children in cohabitation. That is in fact what we observe (Andersson and Philipov 2002; Andersson et al. 2017). Some scholars have even suggested that the decision to marry before having children no longer indicates a different level of commitment to each other but is driven instead by deep-held religious convictions or "fashion" (Ohlsson-Wijk 2011). Only the former would produce increasing stability among married parents. The fact that the relative separation rates for married and cohabiting parents remained quite stable across British and Scandinavian cohorts (being higher only in Italy when cohabiting parenthood was extremely rare) suggests that the decision to marry before having children remains a marker of the more stable partnerships.

The importance of parental divorce for increasing rates of parental separation was not entirely surprising, but has not been highlighted in previous research on family instability. As we noted above, no nationally comparable statistics track divorces separately for those with and without children. Earlier studies with survey data focused only on parental divorce, even where a substantial proportion of parents cohabited at birth. Research on the relative stability of cohabitation and marriage often lumps together unions with and without children, ignoring the fact that cohabitation prior to childbearing is explicitly viewed as a test for marriage.

The validity of our decomposition depends, of course, on the validity of the simulated populations. We have checked a large number of birth and union indicators against the samples we started with and against external national data; the simulated populations appear to be valid. We note, however, that models underlying the simulation are based only on demographic events. They incorporate (and implicitly control for) associations between cohabiting parenthood and parity, family complexity, prior cohabitation and/or marriage, and differentials in the timing of births and union events across cohorts. They do not, however, incorporate variations in parental background, place of birth, education or other experiences and characteristics that may influence life course choices. The models can be viewed as a representation of the engine of family life trajectories, with each component influenced by

prior experiences and fixed characteristics. They simply demonstrate the implications for future life course events of earlier life course choices.

An important distinction between our analyses and other research on parental cohabitation and separation is that we did not include marriage after birth in the decomposition. As considerable research has shown, parents who marry after birth have similar rates of divorce to those who married prior to birth (Le Bourdais & Lapierre-Adamcyk 2004; Manning et al. 2004; Wu and Musick 2008; Rackin and Gibson-Davis 2012; Musick & Michelmore 2015; 2017). The hazard regressions incorporate the risk of marriage for cohabiting parents and the risk of divorce for married parents who had cohabited prior to marriage versus those who did not. Nevertheless, the population of women cohabiting at first birth includes those who will and will not marry and who separate before marriage or eventually divorce. A further refinement of the decomposition could distinguish such couples, as well as identify the importance of marriage timing before or after first birth for dampening the contributions of parental cohabitation to separation (cf. Holland 2013; 2017).

The estimated contribution of cohabitation to parental separation rates does not, of course, imply that cohabitation is a cause of parental separation. Rather, we interpret the decomposition as showing the extent to which the threshold of relationship commitment required for marriage – but not for parenthood – has increased. At the same time, even the decreasing proportion of those who passed the commitment threshold for marriage experienced increasing probabilities of separation (divorce). Larger social and economic changes affecting the lives and relationships of both cohabiting and married parents remain powerful forces in family stability.

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REFERENCES

Andersson, G. and Philipov, D. (2002). Life-table representations of family dynamics in Sweden, Hungary, and 14 other FFS countries: a project of descriptions of demographic behaviour. *Demographic Research,* 7(4): 67-144.

Andersson, G., Thomson, E., & Duntava, A. (2017). Life-table representations of family dynamics in the 21st century. *Demographic Research,* 37:1081-1230.

Basten, S., Sobotka, T. & Zeman, K. (2014). Future Fertility in Low Fertility Countries. In Lutz W., Butz W.P., KC S., (Eds.) *World Population & Human Capital in the Twenty-first Century*. Oxford University Press: Oxford, UK.

Beaujouan, É., Berrington, A., Lyons-Amos, M. & Ní Bhrolcháin, M. (2014). User Guide to the Centre for Population Change GHS database 1979–2009. ESRC Centre for Population Change Working Paper, 47.

Berrington, A., Perelli-Harris, B., & Trevena. P. (2015). Commitment and the changing sequence of cohabitation, childbearing and marriage: Insights from qualitative research in the UK. *Demographic Research,* 33, 327-362.

Berrington, A., Beaujouan, É., Lyons-Amos, M. & Ní Bhrolcháin, M. (2011). Evaluation of the Partnership Histories in the Centre for Population Change GHS Time Series Dataset. ESRC Centre for Population Change Working Paper, 12.

Beaujouan, É., Brown, J. J., & Ní Bhrolcháin, M. (2011). Reweighting the General Household Survey 1979-2007. *Population Trends*, 145, 119–145.

Brown, S. L. (2004b). Moving from cohabitation to marriage: effects on relationship quality. *Social Science Research*, 33, 1-20.

Bumpass, L. L., & Lu, H. H. (2000). Trends in cohabitation and implications for children's family contexts in the United States. *Population Studies*, 54(1), 29-41.

Bumpass, L.L., Sweet, J.A., & Cherlin, A.J. (1991). The role of cohabitation in declining rates of marriage. *Journal of Marriage and the Family,* 53, 913-927.

Chevan, A. & Sutherland, M. (2009). Revisiting Das Gupta: Refinement and extension of standardization and decomposition. *Demography*, 46, 429-449.

Clarke, L., & Jensen, A.-M. (2004). Children's risk of parental break-up: Norway and England/Wales compared. *Acta Sociologica,* 47, 51–69.

Das Gupta, P. (1993). Standardization and Decomposition of Rates: A User's Manual. U.S. Bureau of the Census, Current Population Reports, Series P23-186, U.S. Government Printing Office, Washington, DC.

Fokkema, T., Kveder, A., Heikel, N., Emery, T., & Liefbroer, A. C. (2016). Generations and Gender Programme Wave 1 data collection: An overview and assessment of sampling and fieldwork methods, weighting procedures, and cross-sectional representativeness. *Demographic Research*, 34, 499-524.

Goldstein, J. (1999). The leveling of divorce in the United States. *Demography* 36, 409-414.

Guzzo, K.B., & Hayford, S.R. (2012). Unintended fertility and the stability of coresidential relationships. *Social Science Research*, 41, 1138-1151.

Hayford, S.R., & Guzzo, K.B. (2010). Age, relationship status, and the planning status of births. *Demographic Research*, 23, 365-398.

Heuveline, P., Timberlake, J.J., & Furstenberg, F.F. Jr. (2003). Shifting childrearing to single mothers: Results from 17 western countries. *Population and Development Review,* 29,

47-71.

Holland, J.A. (2013). Love, marriage, then the baby carriage? The timing of marriage and childbearing in Sweden. *Demographic Research*, 29, 275-306.

Holland, J.A. (2017). The timing of marriage vis-á-vis co-residence and childbearing in Europe and the United States. *Demographic Research*, 36, 609-626.

Human Fertility Database. (2018). Max Planck Institute for Demographic Research (Germany) and Vienna Institute of Demography (Austria). Available at www.humanfertility.org (data downloaded on 2018-05-30).

ISTAT (2018). Statistics retrieved from http://dati.istat.it/?lang=en (data downloaded on 2018-06-01)

Jensen, A.-M., & Clausen, S.-E. (2003). Children and family dissolution in Norway: The impact of consensual unions. *Childhood*, 10, 65-81.

Katus, K., Põldma, A., Puur, A., & Sakkeus, L. (2008). First union formation in Estonia, Latvia and Lithuania: Patterns across countries and gender. *Demographic Research*, 19, 1663-1692.

Kennedy, S. (2004). Education and the formation of new families: A comparative study of cohabitation and nonmarital fertility in Western nations. Paper presented at the Annual Meetings of the Population Association of America, Boston, MA.

Kennedy, S., & Ruggles, S. (2013). Breaking up is hard to count: The rise of divorce in the United States. Working Paper 2013-01, Minnesota Population Center, University of Minneapolis, Minneapolis, Minnesota.

Kennedy, S., & Ruggles, S. (2014). Breaking up is hard to count: The rise of divorce in the United States, 1980-2010. *Demography*, 51, 587-598.

Kitagawa, E. M. (1955). Components of a Difference between Two Rates. *Journal of the American Statistical Association*, 50(272), 1168-94.

Le Bourdais, C., & Lapierre-Adamcyk, E. (2004). Changes in conjugal life in Canada: Is cohabitation progressively replacing marriage? *Journal of Marriage and the Family*, 66(4), 929–942.

Lesthaeghe, R. (2010). The unfolding story of the second demographic transition. *Population and Development Review*, 236, 211-251.

Lichter, D.T., Michelmore, K., Turner, R.N., & Sassler, S. (2016). Pathways to a stable union? Pregnancy and childbearing among cohabiting and married couples. *Population Research and Policy Review*, 35, 377-399.

Liefbroer, A.C., & Dourleijn, E. (2006). Unmarried cohabitation and union stability: Testing the role of diffusion using data from 16 European countries. *Demography*, 43, 203-221.

Manning, W. D., & Smock, P. J. (2005). Measuring and modeling cohabitation: New perspectives from qualitative data. *Journal of Marriage and Family*, 67(4), 989-1002.

Manning, W.D., Brown, S.L., & Payne, K.K. (2014). Two decades of stability and change in age at first union formation. *Journal of Marriage and the Family*, 76, 247-260.

Manning, W.D., Smock, P.J., & Majumdar, D. (2004). The relative stability of cohabiting and marital unions for children. *Population Research and Policy Review*, 23, 135-159.

Meggiolaro, S. & Ongaro, F. (2010). The implications of marital instability for a woman's fertility: Empirical evidence from Italy. *Demographic Research*, 23, 963–996.

Musick, K., & Michelmore, K. (2015). Change in the stability of marital and cohabiting unions following the birth of a child. *Demography*, 52, 1453-1485.

Musick, K., & Michelmore, K. (forthcoming). Cross-national comparisons of union stability in cohabiting and married families with children. *Demography*.

National Records of Scotland (2018). Vital Events Reference Tables 2017. Retrieved from https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/births (data downloaded on 2018-07-03).

Ní Bhrolcháin, M., Beaujouan, É. & Murphy, M. (2011). Sources of error in reported childlessness in a continuous British household survey. *Population Studies*, 65(3), 305–318.

Ohlsson-Wijk, S. (2011). Sweden's marriage revival: An analysis of the new-millennium switch from long-term decline to increasing popularity. *Population Studies*, 65(2), 183-200.

Pelletier, D. (2016). The diffusion of cohabitation and children's risk of family dissolution in Canada. *Demographic Research*, 35, 1317-1342.

Perelli-Harris, B., & Bernardi, L. (2015). Exploring social norms around cohabitation: The life course, individualization, and culture. Introduction to special collection, Focus on Partnerships: Discourses on cohabitation and marriage throughout Europe and Australia. *Demographic Research*, 33, 701-732.

Perelli-Harris, B., & Sánchez Gassen, N. (2012). How similar are cohabitation and marriage? Legal approaches to cohabitation across Western Europe. *Population and Development Review*, 38, 435-467.

Perelli-Harris, B., Kreyenfeld, M. & Kubisch, K. (2010). Harmonized histories: manual for the preparation of comparative fertility and union histories. Working Paper, Max Plank Institute for Demographic Research, Rostock, Germany.

Perelli-Harris, B., Berrington, A., Sánchez Gassen, N., Galezewska, P., & Holland, J. (Forthcoming). Is there a link between the divorce revolution and the cohabitation boom? *Population and Development Review*.

Perelli-Harris, B., Mynarska, M., Berrington, A., Evans, A., Berghammer, C., Isupova, O., Keizer, R., Klärner, A., Lappegård, T, & Vignoli, D. (2014). Towards a deeper understanding of cohabitation: Insights from focus group research across Europe and Australia. *Demographic Research*,34, 1043-1078.

Poortman, A-R., & Mills, M. (2012. Investments in marriage and cohabitation: The role of legal and interpersonal commitment. *Journal of Marriage and Family*, 74, 357-376.

Rackin, H., & Gibson-Davis, C. M. (2012). The role of pre-and postconception relationships for first-time parents. *Journal of Marriage and Family*, 74(3), 526-539.

Raley, R.K., & Bumpass, L. (2003). The topography of the divorce plateau: Levels and trends in union stability in the United States after 1980. *Demographic Research*, 8, 243-260.

Rosina, A. & Fraboni, R. (2004). Is marriage losing its centrality in Italy? *Demographic Research*, 11(6): 149–172.

Rotz, D. (2016). Why have divorce rates fallen? The role of women's age at marriage. *Human Resources*, 51, 961-1002.

Sánchez Gassen, N. & Perelli-Harris, B. (2015). The increase in cohabitation and the role of marital status in family policies: A comparison of 12 European countries. *Journal of European Social Policy*, 25, 431-449.

Sassler, Sharon. 2004. The process of entering into cohabiting unions. *Journal of Marriage and Family*, 66, 491-505.

Schnor, C. (2014). The effect of union status at first childbirth on union stability: Evidence from Eastern and Western Germany. *European Journal of Population*, 30, 129-160.

Sobotka, T., & Toulemon, L. 2008. Changing family and partnership behaviour: Common trends and persistent diversity across Europe. *Demographic Research*, 19, 85–138.

StataCorp. 2013. *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP.

Statistics Canada. (2009). Modgen. Retrieved from http://www.statcan.gc.ca/microsimulation/modgen/modgen-eng.htm.

Statistics Norway (2018). Statistics retrieved from http://www.ssb.no/en/befolkning/statistikker/fodte (downloaded 2018-07-02).

Tach, L. and Edin, K. (2013). The compositional and institutional sources of union dissolution for married and unmarried parents in the United States. *Demography*, 50(5): 1789–1818.

Thomson, E., & Eriksson, H. (2013). Register-based estimates of parental separation in Sweden. *Demographic Research*, 29:1153-1186.

Thomson, Elizabeth, Maria Winkler-Dworak, Martin Spielauer and Alexia Prskawetz. (2012). Union stability as an engine of fertility? A micro-simulation model for France. *Demography*, 49(1):175-195.

U.K. Office of National Statistics (2016). Fertility rates by parity 1934 to 2014, England and Wales. User requested data. Ref: 005488. Statistics retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/adhocs/005488fertilityratesbyparity1934to2014englandandwales.

Vergauwen, J.,Wood, J, De Wachter, J., and Neels, K. (2015) Quality of demographic data in GGS Wave 1. *Demographic Research*, 32(24): 723–774.

Winkler-Dworak, M., Beaujouan, E., Di Giulio, P., and Spielauer, M. (2018) Simulating family life courses: An Application to Italy, Great Britain, and Norway. Unpublished manuscript, Vienna Institute of Demography.

Wu, L.L., & Musick, K. (2008). Stability of marital and cohabiting unions following a first birth. *Population Research and Policy Review*, 27, 713-727.

Zeman, K., Z. Brzozowska, T. Sobotka, E. Beaujouan, A. Matysiak. 2017. Cohort Fertility and Education Database. Methods Protocol. Available at www.cfe-database.org (accessed on 2018-07-11).

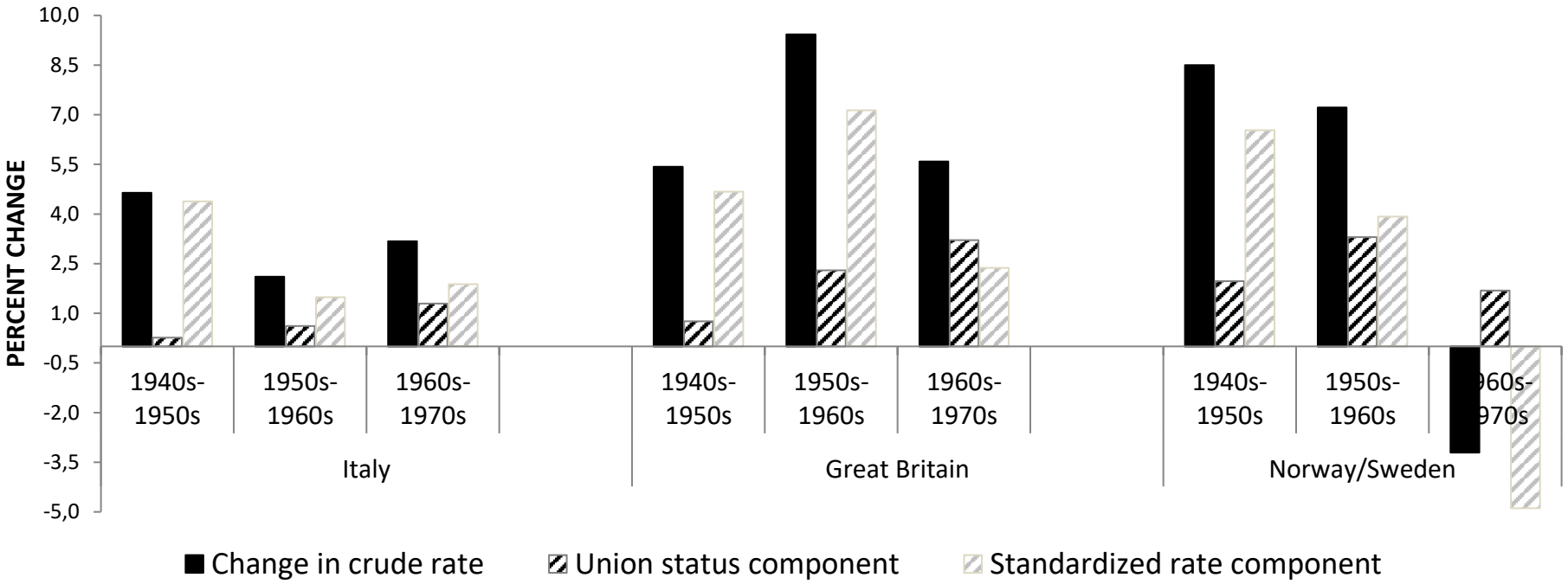

Fig. 1 Cohort Change (1940s-1970s) in Parental Separation: Union Composition versus Rate

APPENDIX

Table A1. Hazard Models for First Birth

	Italy		Great Britain		Scandinavia	
First Birth	coef	stderr	coef	stderr	coef	stderr
Never in a union	-3.395 **	(0.047)	-2.608 **	(0.034)	-2.572 **	(0.083)
First union, cohabiting	-1.080 **	(0.047)	-1.055 **	(0.046)	-0.862 **	(0.066)
First union, married (ref)						
After first union	-2.836 **	(0.107)	-2.060 **	(0.041)	-2.752 **	(0.094)
Second union, cohabiting	-0.651 **	(0.121)	-0.629 **	(0.037)	-0.632 **	(0.066)
Second union, married	-0.113	(0.211)	0.386 **	(0.046)	0.125	(0.108)
After second union	-2.463 **	(0.346)	-2.274 **	(0.120)	-2.734 **	(0.236)
Third union, cohabiting			-0.531 **	(0.083)	-0.525 **	(0.120)
Third union, married			0.401 **	(0.102)	0.386 †	(0.217)
After third union			-1.203 **	(0.138)	-1.401 **	(0.250)
First union duration spline	-1.440 **	(0.068)	-0.258 **	(0.038)	-0.760 **	(0.101)
Second union duration spline	-0.867 *	(0.389)	-0.641 **	(0.102)	-1.058 **	(0.266)
1st union duration spline & cohort 1940-49	-0.579 **	(0.101)	-0.273 **	(0.063)	-0.482 **	(0.152)
1st union duration spline & cohort 1960-69	0.463 **	(0.097)	0.079	(0.049)	0.486 **	(0.130)
1st union duration spline & cohort 1970+	0.745 **	(0.107)	0.207 **	(0.055)	0.827 **	(0.126)
2nd union duration spline & cohort 1940-49	-3.803 *	(1.823)	-0.173	(0.195)	-0.785	(0.515)
2nd union duration spline & cohort 1960-69	-0.617	(0.477)	-0.086	(0.116)	0.738 *	(0.296)
2nd union duration spline & cohort 1970+	-0.019	(0.526)	0.089	(0.133)	0.933 **	(0.291)
Cohort 1940-49	0.132	(0.197)	-0.634 **	(0.121)	-1.069 **	(0.403)

Cohort 1960-69	0.121		(0.199)	-0.289	**	(0.102)	-0.131		(0.437)
Cohort 1970-79	-0.344		(0.218)	0.158	†	(0.093)	-0.304		(0.416)
Cohort 1980+	-0.426	†	(0.231)	0.018		(0.101)	-0.482		(0.424)
Age Spline 1 & cohort 1940-49	-0.111		(0.070)	0.325	**	(0.043)	0.501	*	(0.206)
Age Spline 1 & cohort 1960-69	-0.126	†	(0.072)	0.121	**	(0.037)	-0.261		(0.227)
Age Spline 1 & cohort 1970+	-0.090		(0.078)	0.050		(0.033)	-0.257		(0.215)
Age Spline 2 & cohort 1940-49	0.241	**	(0.082)	-0.283	**	(0.056)	-0.410	†	(0.217)
Age Spline 2 & cohort 1960-69	0.124		(0.085)	-0.072		(0.050)	0.372		(0.240)
Age Spline 2 & cohort 1970-94	0.122		(0.094)	-0.040		(0.045)	0.351		(0.227)
Age Spline 3 & cohort 1940-49	-0.120	**	(0.034)	-0.109	**	(0.029)	-0.165	**	(0.055)
Age Spline 3 & cohort 1960-69	-0.006		(0.034)	-0.081	**	(0.027)	-0.106	†	(0.056)
Age Spline 3 & cohort 1970+	-0.005		(0.039)	-0.099	**	(0.027)	-0.079		(0.057)
Age Spline 4 & cohort 1940-49	-0.022		(0.024)	0.024		(0.017)	0.038		(0.043)
Age Spline 4 & cohort 1960-69	0.051	*	(0.022)	0.073	**	(0.013)	-0.008		(0.039)
Age Spline 4 & cohort 1970+	0.031		(0.030)	0.163	**	(0.018)	0.051		(0.041)
Never in a union & cohort 1940-49	-0.230	**	(0.068)	0.041		(0.052)	0.299	**	(0.110)
Never in a union & cohort 1960-69	-0.276	**	(0.069)	-0.114	*	(0.047)	-0.267	*	(0.123)
Never in a union & cohort 1970-79	-0.408	**	(0.081)	-0.416	**	(0.051)	-0.567	**	(0.137)
Never in a union & cohort 1980+	-0.504	**	(0.133)	-0.304	**	(0.070)	-1.307	**	(0.205)
First union, cohabiting & cohort 1940-49				0.219	*	(0.108)	0.038		(0.104)
First union, cohabiting & cohort 1960-69				-0.059		(0.054)	0.006		(0.089)
First union, cohabiting & cohort 1970-79				-0.159	**	(0.056)	-0.208	*	(0.094)

First union, cohabiting & cohort 1980+			0.102		(0.076)	-0.272	*	(0.130)
Sweden (Norway ref)						-0.067	*	(0.026)

†p<.10 *p<.05 **p<.01

	Subjects	30255	Subjects	61212		Subjects	11034	
	Events	19751	Events	41778		Events	8043	
	Loglik	-7861	Loglik	-43543		Loglik	-6758	
	df	52	df	59		df	60	
	AIC	15827.61	AIC	87205.30		AIC	13638.36	
	BIC	16268.35	BIC	87745.65		BIC	14083.47	
	node1	3	node1	3		node1	2	
Age spline nodes (from age 15)	node2	7	node2	6		node2	7	
	node3	13	node3	12		node3	11	

Table A2. Hazard Models for Second Birth

	Italy			Great Britain			Scandinavia		
Second birth	coef	sig	stderr	coef	sig	stderr	coef	sig	stderr
Not in a union	-1.474	**	(0.079)	-1.215	**	(0.024)	-1.429	**	(0.061)
In cohabiting union with 1st birth	-0.427	**	(0.095)	-0.404	**	(0.025)	-0.340	**	(0.037)
In married union with 1st birth (ref)									
In married union, 1st birth out of union	0.239	**	(0.068)	0.257	**	(0.037)	0.337	**	(0.121)
In cohabiting union, 1st birth out of union	0.003		(0.187)	-0.148	**	(0.038)	-0.242	**	(0.088)
In married union, 1st birth in previous union	1.138	**	(0.228)	0.818	**	(0.069)	0.294		(0.183)
In cohabiting union, 1st birth in previous union	0.359	*	(0.154)	0.029		(0.052)	0.120		(0.094)
Age 15-19	0.440	**	(0.091)	0.095	*	(0.045)	-0.126		(0.124)
Age 20-24	0.202	**	(0.044)	-0.011		(0.023)	-0.088		(0.059)
Age 25-29 (ref)									
Age 30-34	-0.169	**	(0.040)	-0.175	**	(0.024)	-0.094		(0.058)
Age 35-39	-0.570	**	(0.074)	-0.676	**	(0.043)	-0.437	**	(0.110)
Age 40-44	-1.879	**	(0.141)	-1.990	**	(0.097)	-1.861	**	(0.216)
Age 45-49	-4.004	**	(0.511)	-4.000	**	(0.367)	-4.260	**	(1.054)
Cohort 1940-49	0.446	**	(0.066)	0.097	*	(0.043)	0.408	**	(0.104)
Cohort 1960-69	-0.122	†	(0.070)	-0.137	**	(0.041)	0.259	**	(0.097)
Cohort 1970-79	-0.151	†	(0.086)	-0.248	**	(0.047)	0.272	**	(0.102)
Cohort 1980+				-0.419	**	(0.060)			
Age spline 1[1] & cohort 1940-49	-0.060		(0.112)	0.323	**	(0.064)	0.460	**	(0.153)

[1] *Age Spline 1: 15-24 (1), 25-29 (0.5), else 0*

Age spline 1 & cohort 1960-69	-0.043		(0.121)	0.270	**	(0.059)	-0.241		(0.160)
Age spline 1 & cohort 1970+	-0.353	*	(0.153)	0.408	**	(0.064)	-0.302		(0.185)
Age spline 2[1] & cohort 1940-49	0.825	**	(0.211)	0.300	*	(0.145)	0.800	*	(0.335)
Age spline 2 & cohort 1960-69	-0.493	**	(0.184)	-0.159		(0.111)	0.419		(0.268)
Age spline 2 & cohort 1970+	-0.948	**	(0.258)	-0.181		(0.168)	-0.571	†	(0.306)
Duration spline 1 & cohort 1940-49	-0.095	**	(0.028)	-0.102	*	(0.045)	-0.241	**	(0.063)
Duration spline 1 & cohort 1960-69	0.056	†	(0.029)	0.033		(0.043)	-0.014		(0.058)
Duration spline 1 & cohort 1970+	0.115	**	(0.035)	-0.189	**	(0.049)	-0.078		(0.062)
Duration spline 2 & cohort 1940-49	0.095	*	(0.039)	0.065		(0.053)	0.299	**	(0.095)
Duration spline 2 & cohort 1960-69	-0.054		(0.038)	0.008		(0.050)	-0.009		(0.088)
Duration spline 2 & cohort 1970+	-0.135	*	(0.053)	0.358	**	(0.057)	0.138		(0.096)
Duration spline 3 & cohort 1940-49				0.014		(0.032)	-0.121		(0.079)
Duration spline 3 & cohort 1960-69				-0.005		(0.027)	0.083		(0.069)
Duration spline 3 & cohort 1970+				-0.120	**	(0.036)	-0.001		(0.085)
Sweden (Norway ref)							0.109	†	(0.059)
Sweden & cohort 1940-49							-0.255	**	(0.083)
Sweden & cohort 1960-69							0.169	*	(0.080)
Sweden & cohort 1970+							-0.019		(0.085)

†p<.10 *p<.05 **p<.01

[1] *Age spline 2: 35-39 (-1/3), 40-44 (-2/3), else 0*

Duration spline nodes (since 1st birth)	Subjects	19232	Subjects	41101	Subjects	7905
	Events	13481	Events	30565	Events	6373
	Loglik	-25369.7	Loglik	-49661.0	Loglik	-9510.2
	df	38	df	42	df	45
	AIC	50817.4	AIC	99408.0	AIC	19112.5
	BIC	51123.9	BIC	99775.9	BIC	19431.5
	node1	3	node1	1	node1	2
	node2	none	node2	5	node2	5

Table A3. Hazard Models for Third Birth

	Italy			Great Britain			Scandinavia		
Third birth	coef		stderr	coef		stderr	coef		stderr
Not in a union	-0.549	**	(0.144)	-0.116	**	(0.035)	-0.428	**	(0.099)
In union of 1st two births (ref)									
In second birth union, 1st out of union	0.187	†	(0.102)	0.342	**	(0.037)	0.331	**	(0.096)
In second birth union, 1st birth in previous union	0.097		(0.268)	0.331	**	(0.063)	0.493	**	(0.112)
In union, all < current union, 1+ births non-union	0.773	**	(0.285)	1.048	**	(0.058)	0.659	**	(0.167)
In union, all births in previous unions	1.999	**	(0.263)	1.380	**	(0.052)	1.255	**	(0.116)
Age 15-24	1.119	**	(0.109)	0.783	**	(0.053)	-0.331	*	(0.154)
Age 25-29	0.438	**	(0.067)	0.334	**	(0.034)	-0.129		(0.082)
Age 30-34 (ref)									
Age 35-39	-0.601	**	(0.090)	-0.630	**	(0.054)	-0.703	**	(0.105)
Age 40-44	-1.660	**	(0.169)	-1.749	**	(0.111)	-2.316	**	(0.250)
Age 45-49	-3.923	**	(0.676)	-4.058	**	(0.357)	-3.960	**	(0.566)
Age spline 1 & cohort 1940-49	0.352	*	(0.139)	0.464	**	(0.078)	1.031	**	(0.197)
Age spline 1 & cohort 1960-69	-0.275	†	(0.164)	0.087		(0.071)	0.970	**	(0.195)
Age spline 1 & cohort 1970+	-0.133		(0.240)	-0.109		(0.086)	0.834	**	(0.237)
Age spline 2 & cohort 1940-49	0.901	**	(0.321)	0.057		(0.230)	0.588		(0.488)
Age spline 2 & cohort 1960-69	-0.192		(0.345)	-0.363	†	(0.191)	-0.355		(0.384)
Age spline 2 & cohort 1970+	-1.165		(0.751)	-0.200		(0.449)	-1.350	*	(0.607)
Cohort 1940-49	0.252	**	(0.075)	-0.172	**	(0.049)	-0.331	**	(0.096)
Cohort 1950-59 (ref)									

Cohort 1960-69	0.017	(0.083)	0.027	(0.041)	-0.109		(0.086)
Cohort 1970+	0.077	(0.127)	0.012	(0.056)	-0.173	†	(0.104)
Sweden (ref Norway)					-0.157	**	(0.047)

†p<.10 *p<.05 **p<.01

Subjects	13100	Subjects	30072	Subjects	6237
Events	3753	Events	11511	Events	2489
Loglik	-10989.7	Loglik	-30223.1	Loglik	-6233.3
df	30	df	30	df	31
AIC	22041.5	AIC	60508.3	AIC	12530.6
BIC	22272.6	BIC	60763.9	BIC	12744.6

Table A4. Hazard Models for Fourth Birth

	Italy			Great Britain			Scandinavia		
Fourth birth	coef		stderr	coef		stderr	coef		stderr
In union with first three births (ref)									
Not in a union	-0.719	*	(0.299)	0.021		(0.061)	0.138		(0.171)
In union with 2nd and 3rd birth, 1st before union	0.104		(0.190)	0.084		(0.061)	0.035		(0.156)
In union with 3rd birth, first w births before union	0.877	**	(0.288)	0.402	**	(0.065)	0.685	**	(0.177)
In union, all births before current union	1.101	**	(0.388)	1.310	**	(0.070)	1.531	**	(0.204)
Age 15-24	1.618	**	(0.163)	1.124	**	(0.060)	1.097	**	(0.237)
Age 25-29	0.753	**	(0.106)	0.519	**	(0.047)	0.464	**	(0.125)
Age 30-34 (ref									
Age 35-39	-0.557	**	(0.113)	-0.654	**	(0.061)	-0.549	**	(0.128)
Age 40-44	-1.875	**	(0.210)	-1.724	**	(0.124)	-2.622	**	(0.328)
Age 45-49	-4.044	**	(0.743)	-4.227	**	(0.521)			
Cohort 1940-49	0.344	**	(0.095)	-0.100	*	(0.050)	0.075		(0.166)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.154		(0.124)	-0.038		(0.046)	0.233		(0.156)
Cohort 1970+	-0.243		(0.245)	-0.034		(0.059)	-0.043		(0.229)
Sweden (Norway ref)							0.418	*	(0.179)
Sweden & Cohort 1940-49							-0.607	*	(0.271)
Sweden & Cohrot 1960-69							-0.255		(0.248)
Sweden & Cohort 1970+							0.578	†	(0.311)

†p<.10 *p<.05 **p<.01

Subjects	3652
Events	840
Loglik	-2549.3
df	19
AIC	5138.5
BIC	5261.5

Subjects	11313
Events	3564
Loglik	-10119.0
df	19
AIC	20278.0
BIC	20423.5

Subjects	2440
Events	542
Loglik	-1747.3
df	22
AIC	3540.7
BIC	3672.8

Table A5. Hazard Models for First Union (Cohabitation, Marriage Competing Risk)

	Italy		Great Britain		Scandinavia	
First Cohabiting Union	coef	stderr	coef	stderr	coef	stderr
Childless (ref)						
Pregnant with 1st child	2.223 **	(0.238)	1.357 **	(0.098)	1.512 **	(0.106)
1 child, aged < 1y	2.053 **	(0.180)	0.988 **	(0.041)	0.579 **	(0.109)
1 child, aged 1-3y	0.526 **	(0.153)	0.225 **	(0.049)	-0.061	(0.085)
1 child, aged >3y			-0.137 **	(0.049)		
Pregnant with 2nd child			0.636 **	(0.085)	0.037	(0.256)
2 children, youngest aged < 1y	1.941 **	(0.632)	-0.029	(0.114)	-0.241	(0.297)
2 children, youngest aged 1-3y	0.559	(0.389)	-0.505 **	(0.125)	-0.910 **	(0.203)
2 children, youngest aged >3y			-0.627 **	(0.107)	-0.791	(0.585)
Pregnant with 3rd child			-0.053	(0.195)	-1.464 **	(0.371)
3+ children, youngest aged < 1y			-0.578 *	(0.239)		
3+ children, youngest aged 1-3y			-1.193 **	(0.275)		
3+ children, youngest aged >3y			-0.272 †	(0.144)		
Cohort 1940-49	-1.746 **	(0.663)	-2.000 **	(0.401)	-0.520	(0.323)
Cohort 1950-59 (ref)						
Cohort 1960-69	-0.096	(0.395)	1.238 **	(0.137)	0.087	(0.246)
Cohort 1970-79	-0.135	(0.378)	1.475 **	(0.129)	-0.183	(0.236)
Cohort 1980+	0.116	(0.376)	1.563 **	(0.129)	-0.321	(0.238)
Age spline 1 & cohort 1940-49	0.235	(0.306)	0.135	(0.152)	-0.229	(0.189)
Age spline 1 & cohort 1960-69	0.341 *	(0.173)	-0.159 **	(0.055)	0.067	(0.142)
Age spline 1 & cohort 1970+	0.403 *	(0.165)	-0.159 **	(0.051)	0.068	(0.136)

Age spline 2 & cohort 1940-49	-0.155		(0.451)	0.036		(0.187)	0.212		(0.253)
Age spline 2 & cohort 1960-69	-0.676	**	(0.253)	0.111		(0.072)	0.042		(0.187)
Age spline 2 & cohort 1970+	-0.530	*	(0.236)	0.081		(0.068)	0.167		(0.178)
Age spline 3 & cohort 1940-49	-0.098		(0.237)	-0.096		(0.080)	0.112		(0.108)
Age spline 3 & cohort 1960-69	0.430	**	(0.150)	0.106		(0.038)	-0.116		(0.081)
Age spline 3 & cohort 1970+	0.174		(0.134)	0.079	*	(0.036)	-0.242	**	(0.076)
Age spline 4 & cohort 1940-49	0.038		(0.100)	-0.077	†	(0.040)	-0.111	**	(0.039)
Age spline 4 & cohort 1960-69	-0.068		(0.072)	0.022		(0.022)	-0.006		(0.033)
Age spline 4 & cohort 1970-94	-0.033		(0.073)	-0.069	**	(0.027)	0.044		(0.040)
Cohort 1940-49	0.186		(0.442)	0.263		(0.189)	-0.005		(0.163)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.461		(0.292)	-0.037		(0.113)	-0.009		(0.153)
Cohort 1970-79	0.298		(0.283)	0.262	*	(0.109)	0.128		(0.179)
Cohort 1980+	0.778	*	(0.333)	0.345	**	(0.119)	0.385		(0.278)
Pregnant & cohort 1940-49	0.186		(0.442)	0.263		(0.189)	-0.005		(0.163)
Pregnant & cohort 1960-69	0.461		(0.292)	-0.037		(0.113)	-0.009		(0.153)
Pregnant & cohort 1970-79	0.298		(0.283)	0.262	*	(0.109)	0.128		(0.179)
Pregnant & cohort 1980+	0.778	*	(0.333)	0.345	**	(0.119)	0.385		(0.278)
Sweden (Norway ref)							0.529	**	(0.059)
Sweden & cohort 1940-49							0.167	†	(0.097)
Sweden & cohort 1960-69							-0.419	**	(0.078)
Sweden & cohort 1970-79							-0.461	**	(0.080)

Sweden & cohort 1980+							-0.366	**	(0.091)
First Direct Marriage									
Childless (ref)									
Pregnant with 1st child	3.050	**	(0.043)	2.580	**	(0.035)	3.249	**	(0.099)
1 child, aged < 1y	1.619	**	(0.083)	0.695	**	(0.053)	0.627	**	(0.185)
1 child, aged 1-3y	-0.053		(0.103)	-0.399	**	(0.074)	-0.386	*	(0.175)
1 child, aged >3y				-0.441	**	(0.063)			
Pregnant with 2nd child	1.761	**	(0.182)	0.927	**	(0.090)	1.535	**	(0.202)
2 children, youngest aged < 1y	0.326	†	(0.179)	-0.092		(0.146)	0.198		(0.387)
2 children, youngest aged 1-3y				-1.194	**	(0.202)	-0.141		(0.245)
2 children, youngest aged >3y				-0.434	**	(0.122)			
Pregnant with 3rd child				-0.173		(0.263)	-0.396		(1.009)
3+ children, youngest aged < 1y				-0.363		(0.294)	0.044		(0.288)
3+ children, youngest aged 1-3y				-0.889	**	(0.329)			
3+ children, youngest aged >3y				-0.781	**	(0.241)			
Cohort 1940-49	-0.360	*	(0.168)	-0.180		(0.119)	0.809		(1.057)
Cohort 1950-59 (ref)									
Cohort 1960-69	-1.391	**	(0.189)	-0.718	**	(0.127)	0.101		(1.224)
Cohort 1970-79	-1.902	**	(0.256)	-1.563	**	(0.162)	1.149		(1.026)
Cohort 1980+	-2.312	**	(0.257)	-2.041	**	(0.162)	0.960		(1.021)
Age spline 1 & cohort 1940-49	0.083		(0.065)	0.057		(0.045)	-0.149		(0.552)

Age spline 1 & cohort 1960-69	0.354	**	(0.072)	-0.042		(0.049)	-0.565		(0.646)
Age spline 1 & cohort 1970+	0.240	*	(0.096)	-0.124	*	(0.062)	-1.733	**	(0.562)
Age spline 2 & cohort 1940-49	-0.060		(0.083)	0.054		(0.056)	0.026		(0.598)
Age spline 2 & cohort 1960-69	-0.471	**	(0.090)	0.055		(0.062)	0.712		(0.729)
Age spline 2 & cohort 1970+	-0.339	**	(0.117)	0.076		(0.081)	2.205	**	(0.670)
Age spline 3 & cohort 1940-49	0.040		(0.040)	-0.083	**	(0.028)	0.181		(0.137)
Age spline 3 & cohort 1960-69	0.217	**	(0.042)	0.055	†	(0.030)	-0.111		(0.217)
Age spline 3 & cohort 1970+	0.305	**	(0.049)	0.355	**	(0.042)	-0.346		(0.219)
Age spline 4 & cohort 1940-49	-0.093	**	(0.025)	-0.048	*	(0.022)	-0.169	**	(0.051)
Age spline 4 & cohort 1960-69	-0.070	**	(0.025)	-0.030		(0.023)	0.031		(0.067)
Age spline 4 & cohort 1970-94	-0.129	**	(0.032)	-0.263	**	(0.032)	-0.043		(0.080)
Cohort 1940-49	-0.135	*	(0.064)	-0.037		(0.050)	-0.124		(0.120)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.289	**	(0.062)	-0.319	**	(0.057)	-0.652	**	(0.213)
Cohort 1970-79	0.226	**	(0.079)	-0.720	**	(0.094)	-0.609	*	(0.302)
Cohort 1980+	0.788	**	(0.166)	-0.696	**	(0.187)	-0.181		(0.580)
Pregnant & cohort 1940-49	-0.135	*	(0.064)	-0.037		(0.050)	-0.124		(0.120)
Pregnant & cohort 1960-69	0.289	**	(0.062)	-0.319	**	(0.057)	-0.652	**	(0.213)
Pregnant & cohort 1970-79	0.226	**	(0.079)	-0.720	**	(0.094)	-0.609	*	(0.302)
Pregnant & cohort 1980+	0.788	**	(0.166)	-0.696	**	(0.187)	-0.181		(0.580)
Sweden (Norway ref)							-0.871	**	(0.129)

Sweden & cohort 1940-49	0.503	**	(0.150)
Sweden & cohort 1960-69	0.450	*	(0.194)
Sweden & cohort 1970-79	0.778	**	(0.218)
Sweden & cohort 1980+	0.720	*	(0.290)

†p<.10 *p<.05 **p<.01

	Subjects	30255	Subjects	61212	Subjects	11034
	Events 1	2593	Events 1	24625	Events 1	7377
	Events 2	19601	Events 2	25877	Events 2	2185
	Loglik	-26946.7	Loglik	-75047.1	Loglik	-13085.4
	df	85	df	99	df	101
	AIC	54065.5	AIC	150294.2	AIC	26374.7
	BIC	54840.3	BIC	151264.1	BIC	27189.7
	node1	3	node1	3.000	node1	2
Age spline nodes (since age 15)	node2	6	node2	6.000	node2	4
	node3	11	node3	11.000	node3	11

Table A6. Hazard Models for End of First Cohabitation (Competing Risk Marriage and Separation)

	Italy		Great Britain		Scandinavia	
Marriage within first cohabiting union	coef	stderr	coef	stderr	coef	stderr
Childless (ref)						
No shared births with partner	-0.427 *	(0.198)	-0.390 **	(0.047)	-0.304 **	(0.109)
One or more shared births with partner	-0.801 *	(0.379)	-0.540 **	(0.071)	0.006	(0.142)
All births shared with partner	-0.200	(0.155)	-0.503 **	(0.050)	-0.067	(0.085)
Pregnant (ref not pregnant)	1.117 **	(0.191)	1.051 **	(0.068)	1.316 **	(0.079)
Child aged < 3 years (ref no young child)	-0.257	(0.271)	0.004	(0.090)	0.317 **	(0.108)
Age 15-19	0.681 **	(0.230)	-0.083	(0.073)	-0.080	(0.114)
Age 20-24	0.343 *	(0.137)	0.035	(0.040)	0.182 *	(0.072)
Age 25-29 (ref)						
Age 30-34	-0.109	(0.149)	-0.168 **	(0.048)	-0.274 **	(0.091)
Age 35-39	-0.413	(0.252)	-0.460 **	(0.085)	-0.438 **	(0.164)
Age 40-44	-0.779 *	(0.370)	-0.815 **	(0.127)	-0.754 **	(0.250)
Age 45-49	-1.070 *	(0.444)	-0.783 **	(0.181)	-1.086 **	(0.344)
Conort 1940-49	-0.001	(0.329)	0.179 †	(0.094)	0.677 **	(0.136)
Cohort 1950-59 (ref)						
Cohort 1960-69	0.036	(0.196)	-0.378 **	(0.050)	-0.574 **	(0.118)
Cohort 1970-79	-0.033	(0.185)	-0.714 **	(0.053)	-0.820 **	(0.131)
Cohort 1980+	-0.040	(0.222)	-1.121 **	(0.069)	-1.550 **	(0.227)
Duration spline 1 & cohort 1940-49	-0.242	(0.183)	-0.004	(0.040)	-0.172 *	(0.070)

Duration spline 1 & cohort 1960-69	0.229	*	(0.117)	0.110	**	(0.018)	0.188	**	(0.058)
Duration spline 1 & cohort 1970+	0.359	**	(0.114)	0.247	**	(0.019)	0.174	**	(0.066)
Duration spline 2 & cohort 1940-49	0.235		(0.210)	0.076		(0.062)	0.101		(0.101)
Duration spline 2 & cohort 1960-69	-0.337	*	(0.137)	-0.137	**	(0.031)	-0.227	**	(0.077)
Duration spline 2 & cohort 1970+	-0.524	**	(0.144)	-0.327	**	(0.038)	-0.082		(0.084)
Duration spline 3 & cohort 1940-49							0.119		(0.079)
Duration spline 3 & cohort 1960-69							0.088		(0.060)
Duration spline 3 & cohort 1970+							-0.116		(0.080)
Age spline 1[1] & cohort 1940-49	0.329		(0.497)	0.119		(0.173)	-0.154		(0.177)
Age spline 1 & cohort 1960-69	-0.404		(0.300)	-0.177	*	(0.087)	-0.534	**	(0.181)
Age spline 1 & cohort 1970+	-0.910	**	(0.279)	-0.950	**	(0.092)	-1.340	**	(0.208)
Age spline 2[2] & cohort 1940-49	-0.150		(0.776)	0.390		(0.304)	-0.210		(0.407)
Age spline 2 & cohort 1960-69	-0.352		(0.553)	-0.534	**	(0.184)	-0.125		(0.396)
Age spline 2 & cohort 1970+	-0.751		(0.676)	-0.882	**	(0.265)	-0.392		(0.517)
Pregnant & cohort 1940-49	-0.909	*	(0.426)	-0.080		(0.139)	0.016		(0.125)
Pregnant & cohort 1960-69	0.075		(0.235)	-0.394	**	(0.082)	-0.657	**	(0.120)
Pregnant & cohort 1970-79	-0.277		(0.239)	-0.526	**	(0.088)	-1.037	**	(0.154)
Pregnant & cohort 1980+	-0.116		(0.336)	-0.803	**	(0.146)	-0.634	*	(0.291)
Child < 3 & cohort 1940-49	0.456		(0.415)	0.086		(0.158)	-0.316	*	(0.159)

[1] *Age Spline 1: 15-24 (1), 25-29 (0.5), else 0*

[2] *Age spline 2: 35-39 (-1/3), 40-44 (-2/3), else 0*

Child < 3 & cohort 1960-69	0.319		(0.280)	0.143		(0.093)	0.088		(0.117)
Child <3 & cohort 1970-79	0.622	*	(0.271)	0.241	*	(0.093)	-0.040		(0.130)
Child <3 & cohort 1980+	0.407		(0.388)	0.501	**	(0.122)	0.225		(0.242)
Sweden (Norway ref)							-0.686	**	(0.071)
Sweden & cohort 1940-49							0.175		(0.111)
Sweden & cohort 1960-69							0.297	**	(0.097)
Sweden & cohort 1970-79							0.386	**	(0.112)
Sweden & cohort 1980+							0.905	**	(0.220)
Separation from first cohabiting union									
Childless (ref)									
No shared births with partner	-0.435		(0.288)	0.037		(0.054)	0.312	*	(0.140)
One or more shared births with partner	-1.759	*	(0.712)	-0.159	*	(0.078)	-0.222		(0.228)
All births shared with partner	-0.467	*	(0.212)	-0.127	*	(0.053)	-0.249	*	(0.109)
Pregnant (ref not pregnant)	-0.884	**	(0.263)	-0.468	**	(0.056)	-1.836	**	(0.189)
Child aged < 3 years (ref no young child)	0.262		(0.395)	-0.374	*	(0.155)	-0.222		(0.180)
Age 15-19	-0.470		(0.594)	0.116		(0.149)	-0.156		(0.205)
Age 20-24	-0.187		(0.292)	0.142	†	(0.077)	0.004		(0.109)
Age 25-29 (ref)									
Age 30-34	0.026		(0.194)	-0.034		(0.069)	0.011		(0.121)
Age 35-39	0.213		(0.281)	-0.143		(0.111)	-0.405	*	(0.191)
Age 40-44	-0.032		(0.385)	-0.157		(0.145)	-0.332		(0.254)
Age 45-49	0.176		(0.450)	-0.452	*	(0.224)	-0.189		(0.344)

Cohort 1940-49	-0.314		(0.439)	0.391	**	(0.145)	-0.443	*	(0.207)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.252		(0.244)	0.287	**	(0.076)	0.301	*	(0.124)
Cohort 1970-79	0.285		(0.238)	0.347	**	(0.077)	0.426	**	(0.120)
Cohort 1980+	0.069		(0.295)	0.561	**	(0.083)	0.636	**	(0.130)
Age spline 1[1] & cohort 1940-49	-0.694		(1.635)	-1.716	**	(0.456)	-0.653		(0.434)
Age spline 1 & cohort 1960-69	-0.395		(0.670)	-0.258		(0.162)	0.189		(0.241)
Age spline 1 & cohort 1970+	0.901		(0.621)	0.421	**	(0.156)	0.714	**	(0.224)
Age spline 2[2] & cohort 1940-49	-0.030		(0.766)	0.544		(0.346)	-0.163		(0.439)
Age spline 2 & cohort 1960-69	0.202		(0.611)	0.166		(0.217)	0.341		(0.360)
Age spline 2 & cohort 1970+	0.791		(0.934)	-0.017		(0.340)	1.550	*	(0.632)
Child < 3 & cohort 1940-49	-0.315		(0.748)	-0.066		(0.325)	0.232		(0.349)
Child < 3 & cohort 1960-69	-0.895	†	(0.497)	0.190		(0.161)	-0.427	*	(0.201)
Child <3 & cohort 1970-79	-0.461		(0.441)	0.219		(0.157)	-0.162		(0.198)
Child <3 & cohort 1980+	-0.610		(0.637)	0.430	**	(0.164)	-0.490	†	(0.275)
Sweden (ref Norway)							0.074	†	(0.044)
†p<.10 *p<.05 **p<.01	Subjects	2593		Subjects	24625		Subjects	7377	

[1] *Age Spline 1: 15-24 (1), 25-29 (0.5), else 0*

[2] *Age spline 2: 35-39 (-1/3), 40-44 (-2/3), else 0*

	Events 1	1378		Events 1	12777		Events 1	3722
	Events 2	596		Events 2	7424		Events 2	2452
	Loglik	-5056.9		Loglik	-45988.0		Loglik	-13443.4
	df	79		df	79		df	88
	AIC	10273.7		AIC	92136.0		AIC	27064.8
	BIC	10802.2		BIC	92838.2		BIC	27737.5
Duration spline nodes	node1	2		node1	5		node1	2
	node2	0		node2	O		node2	8

Table A7. Hazard Models for First Divorce

	Italy			Great Britan			Scandinavia		
First divorce	coef		stderr	coef		stderr	coef		stderr
Childless (ref)									
No shared births with partner	0.446	*	(0.191)	0.726	**	(0.070)	0.441	*	(0.225)
1 birth in current union	-0.602	**	(0.091)	-0.043		(0.036)	0.000		(0.104)
2 births in current union	-1.101	**	(0.107)	-0.239	**	(0.036)	-0.446	**	(0.105)
2 births, 1 in current union	-0.652	*	(0.287)	0.404	**	(0.066)	0.005		(0.177)
3+ births in current union	-1.216	**	(0.151)	-0.155	**	(0.043)	-0.593	**	(0.124)
3+ births, 1 or 2 births out of union	-0.583	†	(0.338)	0.400	**	(0.069)	0.250		(0.180)
Pregnant (ref not pregnant)	-0.501	**	(0.114)	-0.945	**	(0.052)	-1.591	**	(0.209)
Child aged < 3 years (ref no young child)	0.134		(0.134)	-0.490	**	(0.047)	-0.679	**	(0.088)
Age 15-19	0.126		(0.286)	0.981	**	(0.095)	0.815	*	(0.388)
Age 20-24	0.202		(0.145)	0.453	**	(0.047)	0.614	**	(0.153)

Age 25-29 (ref)									
Age 30-34	0.123		(0.103)	-0.272	**	(0.036)	-0.297	**	(0.103)
Age 35-39	0.222		(0.145)	-0.589	**	(0.052)	-0.390	**	(0.135)
Age 40-44	0.253		(0.181)	-0.897	**	(0.069)	-0.684	**	(0.172)
Age 45-49	0.268		(0.206)	-1.258	**	(0.087)	-1.032	**	(0.210)
Cohort 1940-49	0.045		(0.379)	-0.091		(0.097)	-0.111		(0.133)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.416		(0.260)	0.270	**	(0.059)	0.319	*	(0.131)
Cohort 1970-79	0.454		(0.290)	0.362	**	(0.073)	0.522	**	(0.182)
Cohort 1980+	0.239		(0.588)	0.182		(0.158)	0.519		(0.330)
Direct marriage	-0.943	**	(0.180)	-0.352	**	(0.043)	-0.577	**	(0.102)
Age spline 1[1] & cohort 1940-49	-0.600		(0.493)	-0.322	*	(0.139)	-0.147		(0.388)
Age spline 1 & cohort 1960-69	-0.363		(0.339)	0.142		(0.108)	-0.202		(0.410)
Age spline 1 & cohort 1970+	0.190		(0.364)	0.083		(0.144)	0.385		(0.537)
Age spline 2[2] & cohort 1940-49	0.281		(0.291)	-0.044		(0.094)	0.063		(0.204)
Age spline 2 & cohort 1960-69	0.752	**	(0.271)	0.151		(0.103)	0.345		(0.254)
Age spline 2 & cohort 1970+	0.844		(0.561)	0.280		(0.246)	1.664	*	(0.695)
Child <3 & cohort 1940-49	-0.032		(0.236)	-0.079		(0.075)			
Child <3 & cohort 1960-69	-0.260		(0.170)	0.003		(0.059)			
Child <3 & cohort 1970-79	-0.574	**	(0.208)	0.039		(0.077)			

[1] *Age Spline 1: 15-24 (1), 25-29 (0.5), else 0*

[2] *Age spline 2: 35-39 (-1/3), 40-44 (-2/3), else 0*

Child <3 & cohort 1980+	-0.155		(0.423)	0.140		(0.197)		
Direct marriage & cohort 1940-49	-0.673	†	(0.345)	-0.138		(0.091)	-0.095	(0.139)
Direct marriage & cohort 1960-69	0.185		(0.233)	0.091	†	(0.055)	0.038	(0.174)
Direct marriage & cohort 1970-79	0.540	*	(0.265)	0.011		(0.077)	-0.099	(0.263)
Direct marriage & cohort 1980+	0.921		(0.575)	0.005		(0.196)	-2.501	* (1.060)
Sweden (ref Norway)							0.033	(0.059)

†p<.10 *p<.05 **p<.01

Subjects	20979	Subjects	38654	Subjects	5907
Events	1839	Events	11257	Events	1586
Loglik	-8391.4	Loglik	-30443.8	Loglik	-4663.3
df	40	df	40	df	37
AIC	16864.8	AIC	60969.6	AIC	9402.602
BIC	17190.9	BIC	61318.1	BIC	9655.4

Table A9. Hazard Models for Higher-Order Union (Cohabitation versus Direct Marriage)

	Italy			Great Britain			Scandinavia		
Higher-order Cohabiting Union	coef		stderr	coef		stderr	coef		stderr
Childless (ref)									
1 birth	-0.389	**	(0.099)	-0.375	**	(0.027)	-0.383	**	(0.055)
2 births	-0.740	**	(0.134)	-0.227	**	(0.027)	-0.170	**	(0.063)
3+ births	-0.884	**	(0.217)	-0.395	**	(0.034)	-0.258	**	(0.086)
Pregnant (ref not pregnant)	1.481	**	(0.174)	0.700	**	(0.046)	1.301	**	(0.094)
Child aged < 3 years (ref no young child)	-0.359	*	(0.178)	-0.187	**	(0.034)	-0.250	**	(0.089)
Age 15-24	0.103		(0.161)	0.060	†	(0.032)	0.430	**	(0.065)
Age 25-29	0.326	**	(0.114)	0.164	**	(0.027)	0.373	**	(0.058)
Age 30-34 (ref)									
Age 35-39	-0.291	*	(0.126)	-0.242	**	(0.032)	-0.240	**	(0.073)
Age 40-44	-0.475	**	(0.159)	-0.491	**	(0.040)	-0.417	**	(0.083)
Age 45-49	-0.862	**	(0.214)	-0.763	**	(0.052)	-0.938	**	(0.106)
Cohort 1940-49	-0.156		(0.147)	-0.160	**	(0.035)	-0.122	†	(0.069)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.212	*	(0.105)	0.067	**	(0.025)	0.175	**	(0.055)
Cohort 1970+	0.528	**	(0.121)	0.074	**	(0.028)	0.236	**	(0.055)
Two previous unions (ref one previous)	0.412	*	(0.167)	0.065	*	(0.026)	0.189	**	(0.038)
Sweden (ref Norway)							0.078		(0.056)

Higher-order Union Direct Marriage											
Childless (ref)											
Children	-0.685	**	(0.197)	-0.115	*	(0.056)	-0.020		(0.242)		
Pregnant (ref not pregnant)	2.463	**	(0.285)	1.603	**	(0.095)	2.121	**	(0.291)		
Child aged < 3 years (ref no young child)	0.361		(0.385)	-0.058		(0.090)	-0.290		(0.437)		
Age 15-24	0.105		(0.348)	0.414	**	(0.091)	-0.253		(0.391)		
Age 25-29	-0.119		(0.285)	0.420	**	(0.071)	0.249		(0.269)		
Age 30-34 (ref)											
Age 35-39	-0.421	†	(0.250)	-0.453	**	(0.081)	0.296		(0.269)		
Age 40-44	-0.853	**	(0.285)	-0.816	**	(0.097)	-0.440		(0.314)		
Age 45-49	-2.246	**	(0.444)	-1.260	**	(0.115)	-1.212	**	(0.431)		
Cohort 1940-49	-0.277		(0.283)	0.598	**	(0.060)	0.407	†	(0.237)		
Cohort 1950-59 (ref)											
Cohort 1960-69	-0.206		(0.215)	-0.656	**	(0.066)	-0.227		(0.253)		
Cohort 1970+	-0.020		(0.279)	-1.548	**	(0.102)	-0.501		(0.305)		
Two previous unions (ref one previous)	-0.150		(0.446)	-0.220	**	(0.084)	-0.070		(0.264)		
Sweden (ref Norway)							-0.013		(0.182)		

†p<.10 *p<.05 **p<.01

Subjects	3166
Events 1	794
Events 2	177
Loglik	-3495.7
df	41
AIC	7075.4
BIC	7363.1

Subjects	19563
Events 1	12585
Events 2	1843
Loglik	-41762.4
df	41
AIC	83608.9
BIC	83974.4

Subjects	4167
Events 1	3334
Events 2	151
Loglik	-7839.1
df	43
AIC	15766.1
BIC	16084.5

Table A10. Hazard Models for Marriage or Separation in Higher-Order Cohabiting Union

	Italy		Great Britain		Scandinavia	
Marriage in Union	coef	stderr	coef	stderr	coef	stderr
Childless (ref)						
No shared births with partner	-0.174	(0.173)	-0.049	(0.032)	-0.149 †	(0.084)
One or more shared births with partner	-0.367	(0.289)	-0.167 *	(0.069)	-0.036	(0.138)
All births shared with partner	-0.125	(0.256)	-0.204 **	(0.073)	0.012	(0.130)
Pregnant (ref not pregnant)	0.545	(0.482)	0.986 **	(0.080)	0.942 **	(0.169)
Child aged < 3 years (ref no young child)	0.053	(0.254)	0.031	(0.056)	0.221 *	(0.110)
Age 15-24	0.155	(0.368)	-0.333 **	(0.053)	-0.399 **	(0.123)
Age 25-29	-0.109	(0.229)	0.057	(0.037)	0.063	(0.079)
Age 30-34 (ref)						
Age 35-39	-0.189	(0.198)	-0.172 **	(0.042)	-0.161 †	(0.094)
Age 40-44	-0.479 *	(0.235)	-0.269 **	(0.050)	-0.523 **	(0.121)
Age 45-49	-0.703 *	(0.324)	-0.290 **	(0.062)	-0.622 **	(0.152)
Cohort 1940-49	-0.241	(0.227)	0.154 **	(0.047)	0.301 **	(0.111)
Cohort 1950-59 (ref)						
Cohort 1960-69	0.132	(0.179)	-0.191 **	(0.037)	-0.093	(0.089)
Cohort 1970+	-0.071	(0.233)	-0.419 **	(0.048)	-0.381 **	(0.101)
Pregnant & cohort 1940-49	0.533	(0.815)	-0.197	(0.154)	0.521 †	(0.285)
Pregnant & cohort 1960-69	0.026	(0.612)	-0.359 **	(0.105)	-0.763 **	(0.230)
Pregnant & cohort 1970+	0.411	(0.653)	-0.735 **	(0.126)	-0.604 *	(0.236)

Two previous unions (ref one previous)	-0.028		(0.262)	-0.146	**	(0.039)	-0.061		(0.088)
Sweden (ref Norway)							-0.226	**	(0.060)
Separation from union									
Childless (ref)									
No shared births with partner	-0.587	**	(0.200)	-0.140	**	(0.047)	-0.213	*	(0.098)
One or more shared births with partner	-1.013	*	(0.395)	0.047		(0.085)	-0.344	*	(0.163)
All births shared with partner	-1.075	**	(0.384)	-0.219	*	(0.094)	-0.656	**	(0.164)
Pregnant (ref not pregnant)	-1.725	*	(0.778)	-0.589	**	(0.097)	-1.923	**	(0.310)
Child aged < 3 years (ref no young child)	-0.342		(0.412)	-0.280	**	(0.073)	-0.531	**	(0.161)
Age 15-24	0.159		(0.396)	0.360	**	(0.063)	0.314	*	(0.136)
Age 25-29	0.246		(0.247)	0.078		(0.054)	0.070		(0.110)
Age 30-34 (ref)									
Age 35-39	-0.043		(0.230)	0.028		(0.063)	0.003		(0.123)
Age 40-44	-0.789	*	(0.336)	-0.049		(0.078)	-0.242	†	(0.145)
Age 45-49	-0.518		(0.350)	-0.068		(0.100)	-0.496	**	(0.190)
Cohort 1940-49	-0.229		(0.285)	-0.279	**	(0.093)	-0.022		(0.151)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.254		(0.229)	0.463	**	(0.055)	0.471	**	(0.114)
Cohort 1970+	0.215		(0.255)	0.806	**	(0.063)	0.600	**	(0.127)

Two previous unions (ref one previous)	0.294		(0.307)	0.167	**	(0.052)	0.130		(0.106)
Sweden (ref Norway)							-0.004		(0.074)

†p<.10 * p<.05 **p<.01

Subjects	743	Subjects	10830	Subjects	2816	
Events 1	263	Events 1	6388	Events 1	716	
Events 2	182	Events 2	3100	Events 2	396	
Loglik	-1291.5	Loglik	-22598.6	Loglik	-2840.1	
df	46	df	46	df	46	
AIC	2677.0	AIC	45291.1	AIC	5774.1	
BIC	2933.5	BIC	45671.4	BIC	6061.8	

Table A11. Hazard Models for Divorce in Higher-Order Marital Union

	Italy			Great Britain			Scandinavia		
	coef		stderr	coef		stderr	coef		stderr
Childless (ref)									
No shared births with partner	-0.646	†	(0.389)	0.305	**	(0.077)	0.390	†	(0.226)
All shared with partner				0.123		(0.085)	-0.105		(0.245)
One or more shared with partner				-0.201	*	(0.093)	-0.513	*	(0.243)
Pregnant (ref not pregnant)	-1.206		(1.035)	-1.267	**	(0.179)	-1.111	*	(0.451)
Child aged < 3 years (ref no young child)	0.016		(0.437)	-0.464	**	(0.084)	-0.664	**	(0.208)
Age 15-24	0.305		(0.873)	0.589	**	(0.150)	0.305		(0.507)
Age 25-29	-0.074		(0.593)	0.108		(0.087)	0.114		(0.234)
Age 30-34 (ref)									
Age 35-39	-0.717		(0.491)	-0.193	**	(0.071)	-0.229		(0.180)
Age 40-44	-0.121		(0.516)	-0.325	**	(0.082)	-0.755	**	(0.206)
Age 45-49	-0.302		(0.717)	-0.575	**	(0.100)	-0.896	**	(0.240)
Cohort 1940-49	-0.415		(0.563)	-0.271	**	(0.072)	-0.528	**	(0.202)
Cohort 1950-59 (ref)									
Cohort 1960-69	0.137		(0.397)	0.315	**	(0.061)	0.182		(0.161)
Cohort 1970+	0.277		(0.542)	0.408	**	(0.093)	0.271		(0.207)
Direct marriage (ref cohabited)	0.494		(0.348)	0.411	**	(0.057)	0.559	**	(0.194)
Two previous unions (ref one previous)	1.119	*	(0.545)	0.374	**	(0.076)	0.466	**	(0.180)

Sweden (ref Norway)				0.141	(0.124)

†p<.10 *p<.05 **p<.01

Subjects	440	Subjects	8236	Subjects	1475
Events	49	Events	1855	Events	300
Loglik	-261.2	Loglik	-5185.7	Loglik	-919.1
df	20	df	22	df	23
AIC	564.4	AIC	10417.4	AIC	1886.1
BIC	651.8	BIC	10577.4	BIC	2012.8

Appendix Table 12. Decomposition of Change in Probability of Parental Separation, Union at 1st Birth

	Mother's Birth Cohort		
	1940s-1950s	1950s-1960s	1960s-1970s
Italy			
Change in crude rate	4.6	2.1	3.2
Due to shift in union context	0.3	0.6	1.3
Cohabiting	0.3	0.8	2.0
Married	0.0	-0.2	-0.7
Due to change in standardized rate	4.4	1.5	1.9
Cohabiting	0.2	-0.2	-0.1
Married	4.1	1.7	2.0
Great Britain			
Change in crude rate	5.4	9.4	5.6
Due to shift in union context	0.8	2.3	3.2
Cohabiting	1.5	6.1	7.4
Married	-0.8	-3.8	-4.2
Due to change in standardized rate	4.7	7.1	2.4
Cohabiting	0.2	1.5	2.4
Married	4.5	5.6	0.0
Norway/Sweden			
Change in crude rate	8.5	7.2	-3.2
Due to shift in union context	2.0	3.3	1.7
Cohabiting	5.2	10.3	2.7
Married	-3.3	-7.0	-1.0
Due to change in standardized rate	6.5	3.9	-4.9
Cohabiting	1.9	2.0	-0.6
Married	4.7	1.9	-4.3

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