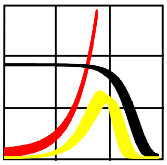

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The impact of children on divorce risks in first and later marriages

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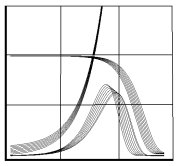

AE/GA, 27 October 2001

The impact of children on divorce risks in first and later marriages

by
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Abstract. In this study, we examine the effect of children on divorce risks in first and subsequent marriages in Sweden and compare risk patterns in the two types of marriages based on register data. We examine the impact of parity and the age of the youngest child while standardizing for age at marriage, premarital childbearing, calendar year, and marital duration. We apply our models to Swedish register data and also compute a number of interactions between marital order and our other demographic variables. We find independent effects of parity and the age of the youngest child on the disruption risk in both a first and a later marriage. In general, the patterns of divorce risks for women in later marriages are quite similar to the patterns in first marriages, but the effect of the number of children is weaker in subsequent marriages. Consistent with other studies, the level of disruption risk is higher in later marriages than in first marriages.

1. Introduction

The impact of children on divorce risks in first marriages has been examined in great detail by several authors; for related studies, see Teachman (1982), Waite and Lillard (1991), Toulemon (1995a), and Andersson (1997). By contrast, relatively few studies provide a detailed examination of risk patterns with regard to children of women who have been married more than once. For a selection of studies containing pieces of information, see Teachman (1986), Martin and Bumpass (1989), and Wineberg (1991, 1992).

The existing information on dynamics in higher-order marriages mainly stems from literature that focuses on the United States. In the US, marriages of higher orders are fairly common: more than a third of women who married there in 1988 had already been married before that event (U.S. Census Bureau, 1999). In Sweden in the same year, only a fifth of newly formed marriages were formed by previously married women (SCB, 1989, Table 5.1). In the present study, we use Swedish population-register data in order to examine the dynamics of higher-order marriages in Sweden. Since our data set is so huge, covering practically the whole female population of Sweden, we will be able to make a detailed and reliable examination of patterns in divorce risks also for the minority of marriages that are formed by a previously married woman.

For the US, Martin and Bumpass (1989) showed that a large portion of the women who remarried in that country had entered their first marriage already as a teenager. In addition, and more importantly for the purpose of our study, around three-quarters of the women in their sample who entered a second marriage were already mothers at that union-formation event. In Sweden, very few people marry while being teenagers (Andersson, 1998), which may partly explain the lower prevalence of higher-order marriages in Sweden as compared to the US. In contrast, tabulations from our data reveal that the fraction of women who are mothers when they enter a higher-order marriage is even higher in Sweden than in the US (Note 1). Thus, the role of children is at least as relevant in explaining the divorce behavior in higher-order marriages in Sweden as it is in the US.

In his study of higher-order marriages in the United States, Wineberg (1991) examined the impact of inter-marital childbearing on the disruption risks in second marriages. He found a significantly higher disruption risk for white remarried women who had children born between the first and the second marriages. In addition, Wineberg (1992) reports that a child born in the second marriage has a stabilizing effect on that marriage, in contrast to the

effect produced by children that were brought into the marriage. The negative effect of premarital children ceases to be significant after the first 5 years of the higher-order marriage.

For Sweden, Andersson (1995) found an increased risk of divorce for women in second or later marriages compared to women in first marriages. He also found that the differences in disruption risks between women of different parities were smaller in later marriages than in first marriages. An ensuing study by Andersson (1997) examined in greater detail the impact of children on disruption risks in first marriages by considering the separate effects of the following child factors: parity, premarital childbearing, and the age of the youngest child. The impact of these factors has not yet been examined to the same extent for marriages of a later order. In the present study, we extend the analysis of Andersson (1997) in order to also apply it to women who have already experienced a marital dissolution. To summarize, the purpose of this study is to examine the impact of children on divorce risks in Sweden, with special reference to differences in risk patterns between women in first and later marriages. We will otherwise use data and model specifications similar to those used by Andersson (1997).

We use the following factors in our analysis (Table 1). *Marital order* (Factor A) indicates whether the present marriage is the first or a later marriage. We estimate separate models for first and later marriages. The factor *age at marriage* (Factor B) is represented by a number of age groups. Our age intervals are designed to account for a higher prevalence of divorce in the younger age groups. In this part of our comparison, it is important to consider that the age at the formation of a second marriage is necessarily higher than the age at first marriage. (See Hoem, 2000, for more details.) The impact of children on the disruption risks is studied through the following factors: *premarital childbearing* (Factor C), *parity* (Factor D), and *age of youngest child* (Factor E). *Calendar year* (Factor F) is included in order to examine period effects in divorce behavior. *Marital duration* (Factor G) is chosen as our time variable. For a thorough review of the factors included, see Andersson (1997).

2. Data and method

For our analysis, we use individual-level data from the Swedish "Fertility Register", which is kept at Statistics Sweden. All women born between 1946 and 1980 enter our study when they enter their first marriage. The event of interest is the transition from marriage to divorce – either from a first or from a later marriage. We follow each woman who enters a marriage

during her first 15 years of marriage or until a marital dissolution occurs. In addition, right-hand censoring is carried out when the spouse dies, when the woman emigrates or dies herself, or at the end of the study period, whichever comes first. The women are followed throughout the period from 1971 to 1997.

Relative risks of divorce are calculated by applying event-history analysis. This method can be seen as a generalization of indirect standardization; see Hoem (1993) and Hoem (1995). We use a piecewise constant baseline intensity in order to estimate the propensity to divorce. This is done by calculating the intensity for various intervals of marital duration as if the intensity remains constant over each examined interval. The mathematical function for the divorce intensity in our Model 1 (of Table 2), for example, can be written as:

$$\mu_{jkmnp}(t) = b_j\, c_k\, d_{m(t)}\, f_{n(t)}\, g_{p(t)},$$

where the baseline intensity $g_{p(t)}$ refers to the specific effect of marital duration as given when we let our other factors *b, c, d,* and *f* be equal to 1. Here, *p(t)* is the number of the duration interval that contains *t*. For instance, when $b_3 = c_1 = d_2 = f_{10} = 1$, the baseline intensity refers to women in 1980 who had married at age 24-28, had no premarital children, but had one child in 1980.

The factors *parity* and *age of youngest child* cannot be examined in the same model without some rearrangement because some of the possible combinations of their factor levels are logically impossible, which leads to systematic zeros in the exposures (see Hoem, 2000). For instance, it is not possible to get any age of a youngest child for a woman at parity zero. We therefore first examine the influence of factors D and E in two separate sub-models (Model 1: A + B + C + D + F + G, Model 2: A + B + C + E + F + G). In order to examine whether each of the two factors have an independent impact on divorce behavior, we, like Andersson previously (1997), use a third model where we introduce a new combination factor H that excludes the impossible combinations of the two factors (Model 3: A + B + C + H + F + G) (Note 2). In all our models, we standardize for age at marriage, premarital childbearing, calendar year, and marital duration. We estimate these three models (Models 1-3) for first and later marriages separately. In addition, we estimate a number of models with interaction between marital order and our other factors in order to detect differences in divorce risks between first and later marriages. The tables and figures that refer to these interaction models are displayed in an appendix to this paper. Finally, we construct a

calendar-year index of parity-specific divorce risks in the same way as Andersson (1997) for first marriages by combining separate sub-models for childless women and mothers into one presentation of period effects in divorce risks. (Separate sub-models for these categories of women are needed since the factors *premarital childbearing* and *age of youngest child* have no meaning for the childless.) All our computations were done by using the software RocaNova (1993).

3. Results

During the period 1970-1997, a total of 151,028 women in our data divorced from a first marriage while 22,241 women experienced a marital dissolution of a later order. Table 2 presents the results from our three main multiplicative models of divorce risks (Models 1-3). Among other things our results show as usual that women who marry at very young ages have the highest relative risk of divorce. The risk declines steadily with increasing age at marriage and is lowest in the oldest age group. This finding is true for both first and later marriages. An interaction model, displayed in Appendix A1, demonstrates again how the divorce risk is particularly high for women who remarried at very young ages. However, the increased risk of divorce among teenagers who had already experienced one marital dissolution should be interpreted with care. In this youngest age group, there is very little exposure to later marriages (less than one percent of the exposures of the same age group of first marriages). From 1971 to 1997, only 25 divorces occurred in this category of women.

Premarital childbearing leads to higher divorce risks, and this effect is actually slightly stronger in first marriages than in later ones. Consequently, childbearing before a first marriage formation seems to be connected with some characteristics that result in higher disruption risks. The same holds for women who enter a second or a later union. But in this case the vast majority of women have at least one child at that moment (Note 1), so premarital childbearing will be less connected with any deviating high-risk behavior. (See our conclusions for further discussion.) Nevertheless, the effect of marital order itself is stronger than the effect of premarital childbearing; our interaction model shows that later marriages with no premarital children have a higher divorce risk than first marriages with premarital children (Appendix A2).

Model 1 shows that an increasing but still moderate number of children has a stabilizing effect on marriage. This pattern ceases when a mother has a fourth child; we find a

small increase in divorce risk for mothers of four compared to mothers of three children. The highest risk of marital dissolution is found in marriages of women who have no children of their own. The patterns are quite similar for first and later marriages but the effect of parity is less pronounced in later marriages than in first ones. When we examine the interaction between marital order and parity, we find a divorce risk that is around three times higher in later marriages than in first marriages for mothers with two or more children but "only" a double risk for mothers with one or no children (Appendix A3). Evidently, the stabilizing effect of having several children is less pronounced in a later marriage than in a first marriage, even when we control for the effect of premarital childbearing. This might perhaps be an indication that these children more often stem from a previous union than in the case where just a single child was brought into the marriage. In Model 2 we find that an increasing age of a youngest child makes divorce risks escalate. The lowest risk is found at the time of birth of a child. (The highest risk is found when a woman is childless.) This pattern is similar in first and later marriages. However, the stabilizing effect of being pregnant or a mother with a newborn child (of less than one year old) is much weaker for remarried women.

Our combined child factor of Model 3 gives more detail to the impact of children on divorce risks (see Figures 1 and 2). When comparing first and subsequent marriages, we again find somewhat similar patterns for the risks by different parities. For both marital orders, the risks by parity can be described as U-shaped with women of parity two and three having the lowest risk of divorce. At all parities, we find that the risk is lowest at the time of the birth of a child and that the risk increases with the increasing age of the youngest child. For women with only one child, the divorce risk peaks after 3-5 years of marriage independently of the marital order. An interesting finding is that women in a later marriage who have more than three children consistently have the highest risk of divorce of all mothers – even higher than that of mothers with only one child. These findings are standardized for premarital childbearing so that the risks for mothers refer to children born within the actual marriage. Our interaction model in Appendix A5 again displays the pattern of higher risks for remarried women, regardless of parity and age of any youngest child.

The divorce risks are smallest at very short and very long durations of marriage (Table 2). For the first marital order, there has been a pronounced increase in risks over calendar time for all positive parities (Figure 3). Again, the highest risk is found for childless women while the lowest risk is found for women with two or three children. The patterns are somewhat similar but much less clear-cut when we examine the period effects for women in a second or later marriage (Figure 4). Again, we find an increase in risks over calendar time for

mothers, but the increase is much weaker than for first marriages. Likewise, we find a strong increase in the disruption risk of childless remarried women in 1974, just as for childless women in a first marriage (Figure 3). This increase in 1974 is due to liberalizing changes in Swedish legislation concerning divorces that became effective in that year (see Andersson, 1995). As in our Model 1, we find that the effect of parity is relatively weak in later marriages (Figure 4), and that the risks of women with different numbers of children are actually relatively close to each other from the middle of the 1980s onwards.

In summary, we found that the stabilizing effect of having children is less pronounced in later marriages than in first marriages but that the effects of other demographic variables are quite similar in marriages of different orders. The risk of divorce is more than twice as high for remarried women as for women in their first marriage (Appendix A1-A5).

4. Conclusions

In this study, we have replicated the results for first-married women as presented by Andersson (1997) and added an equally detailed examination of patterns in divorce risks of women in a second or later marriage. It turned out that the patterns of divorce risks by various demographic background variables were quite similar for women in first and later marriages. The presence of children reduces the risk of divorce but this effect is much less pronounced for women in a later marriage than for women in a first marriage. At both marital orders, we find independent effects of parity as well as of age of any youngest child: the lowest risks are found when women have two children and when there is a very young child in the marriage. The highest risks are found for childless women and for women with children of school ages.

The risk of divorce is around 2 to 3 times higher for remarried women than for first-time married women. This “super-risk” of divorce for women in a later marriage is perhaps not that surprising, considering the fact that most of them have already gone through a divorce (very few are widows). Perhaps women with a previous divorce have some characteristics that make them more divorce-prone than others. The pattern can probably also be explained in part by the fact that these women have discovered that they are capable of going through a divorce and maintaining acceptable living circumstances also when they are not married. They are therefore less inclined to stay in a marriage that does not work and are more capable of initializing a needed break up.

When one interprets our results, it is important to consider how representative the present study is. One must, for example, be aware that our data for the early 1970s are truncated with respect to the categories we use on several factors (Toulemon, 1995b; Andersson, 1997). However, this is not really a problem since we standardize for compositional changes over our factors. In addition, the pure size of our data allows us to get reliable results also when we examine subgroups that are so small that they would rarely be represented in any type of survey data. Instead, we might be troubled by the fact that any study on the behavior of married people can only cover a fraction of all partnerships in a population. As shown in Andersson (1998), the propensity to marry as well as to remarry (after a first divorce) has been declining in Sweden throughout our study period. This indicates a declining tendency of any data on marital unions to include all co-residential unions. We may here be faced with some selection effects since married people perhaps increasingly tend to represent more traditional values of family life than the cohabiting population does.

To us, the most surprising results of our study were not those that pointed out differences in behavior in first- and later-order marriages but those that showed that the patterns were so similar in unions of the two types. The similarity of the effect of premarital childbearing is especially noteworthy. In our data, we only have information on whether a child was born before marriage formation or not. Our variable might thus cover very different family situations and might often have a meaning for women who enter a first marriage that differs from the meaning for women who form a subsequent marriage. For first marriages, premarital childbearing most likely refers to a situation where the woman marries a man with whom she had already lived together for an extended period of time and with whom she has a child. For later marriages, premarital childbearing is more often likely to cover a situation in which a woman had one or more children in a previous marriage, and therefore brings a stepchild into her new marriage. We would expect a stronger divorce-stimulating effect of a premarital child in the latter than in the former case. In the present study, however, we find no indication of effects in that direction since the effect of premarital childbearing was weaker in later than in first marriages. We speculate that such a pattern arises because premarital children are less common in first than in later marriages and thus in the former case is more likely to be connected with other deviating high-risk behaviors.

Unfortunately, we do not know the real paternity of the children in this study, and thus cannot analyse these issues more in detail. Further research is needed based on a new kind of data. Fortunately, a new data set has recently become available in Statistics Sweden, which indeed includes information on the paternity of children (of the married women). A

more detailed analysis of the new data will take us another step ahead in our understanding of the role of children in the divorce dynamics of women in first and later marriages.

Notes

1. Between 80 and 90 percent of second marriages in Sweden are formed by women who are mothers. At the beginning of the 1980s, this fraction was close to 80 percent while at the end of the 1990s it had risen to 90 percent. In addition, more than a quarter of all women who entered a second marriage in 1971-1997 had given birth to a new child after the disruption of their first marriage (and before entry into second marriage).

2. The new levels of the combined factor are as follows:

Parity\ age	**no child**	**pregnant**	**0**	**1-2**	**3-5**	**6-8**	**9+**
0	1: 1	2: 2	3: X	4: X	5: X	6: X	7: X
1	8: X	9: 8	10: 3	11: 4	12: 5	13: 6	14: 7
2	15: X	16: 14	17: 9	18: 10	19: 11	20: 12	21: 13
3	22: X	23: 20	24: 15	25: 16	26: 17	27: 18	28: 19
4+	29: X	30: 20	31: 21	32: 22	33: 23	34: 24	35: 25

Explanation: Black numbers: simple ordering of factor levels

Red numbers: new factor levels

X: excluded, meaningless factor combinations

NB. Pregnant women are considered as mothers *in spe* which, for example, means that a woman pregnant with her first child will be assigned parity one.

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Table 1: List of variables and factor levels

Factors	Abbrev.	Type	No of levels	Levels
Marital order	A	Fixed	2	first, later
Age at marriage	B	Fixed	5	16-19, 20-23, 24-28, 29-35, 36-49
Premarital child-bearing	C	Fixed	2	yes, no
Parity	D	Time-varying	5	0, 1, 2, 3, 4+
Age of youngest child	E	Time-varying	7	no child, pregnant, 0, 1-2, 3-5, 6-8, 9+ years
Calendar year	F	Time-varying	27	1971,..., 1997 (single years)
Marriage duration	G	Time-varying	6	years 1, 2, 3, 4-6, 7-10, 11-15

Table 2. Relative risks of divorce in 1971-1997, for first and later marital order separately (standardized for single calendar year).

Factors	Model 1	Model 1	Model 2	Model 2	Model 3	Model 3
Marital order	first	later	first	later	first	later
Age at marriage						
16-19	2.79	4.52	2.90	4.14	2.89	4.16
20-23	1.54	1.76	1.60	1.84	1.60	1.84
24-28	1	1	1	1	1	1
29-35	0.74	0.69	0.65	0.63	0.66	0.62
36-49	0.52	0.55	0.38	0.41	0.38	0.40
Premarital children						
no	1	1	1	1	1	1
yes	2.22	1.88	1.32	1.30	1.52	1.23
Child parity						
0	2.21	1.82			see Figures 1-2	
1	1	1				
2	0.55	0.76				
3	0.44	0.75				
4+	0.53	0.90				
Age of youngest child						
no child			1.57	1.49	see Figures 1-2	
pregnant			0.29	0.52		
0			0.10	0.24		
1-2			0.45	0.62		
3-5			1	1		
6-8			1.11	1.19		
9+			1.27	1.29		
Marriage duration						
1 year	1	1	1	1	1	1
2	4.17	3.57	4.21	3.59	4.19	3.59
3	6.77	4.04	6.18	3.87	6.16	3.86
4-6	8.46	3.93	5.92	3.38	6.14	3.33
7-10	7.71	3.04	3.55	2.24	4.16	2.16
11-15	6.36	2.33	2.13	1.47	2.68	1.36

Figure 1: Relative risks of first divorce by parity and age of youngest child. Standardized for age at marriage, premarital childbearing, calendar year, and marital duration.

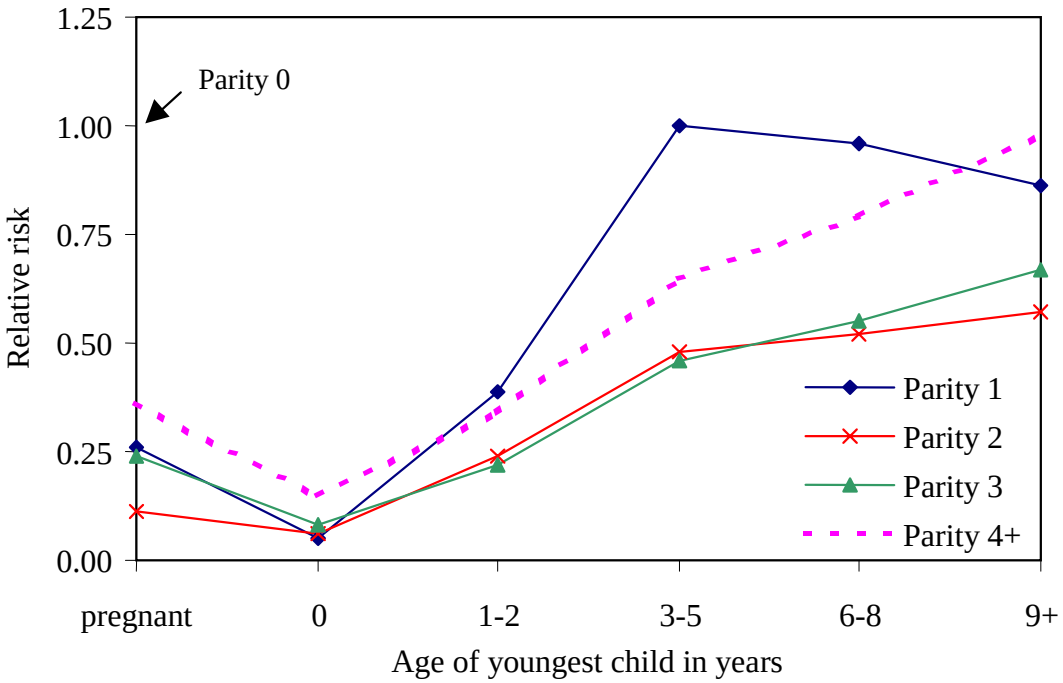


Figure 2: Relative risks of later divorce by parity and age of youngest child. Standardized for age at marriage, premarital childbearing, calendar year, and marital duration.

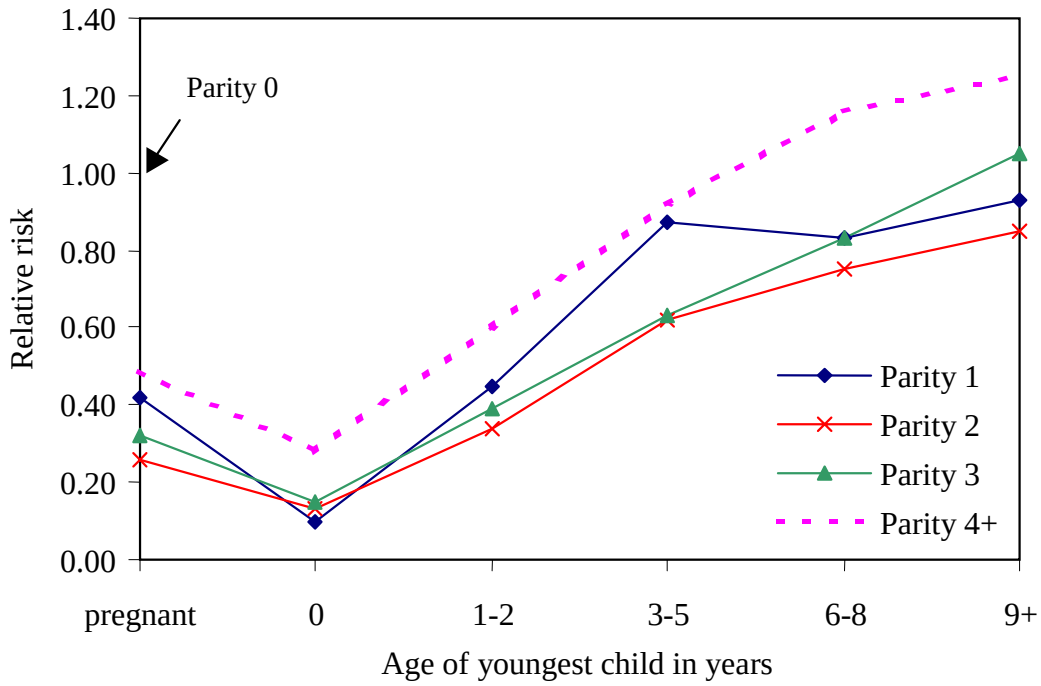


Figure 3: Annual index of divorce risks in first marriages (standardized for age at marriage and marital duration; for mothers also for premarital childbearing and age of youngest child).

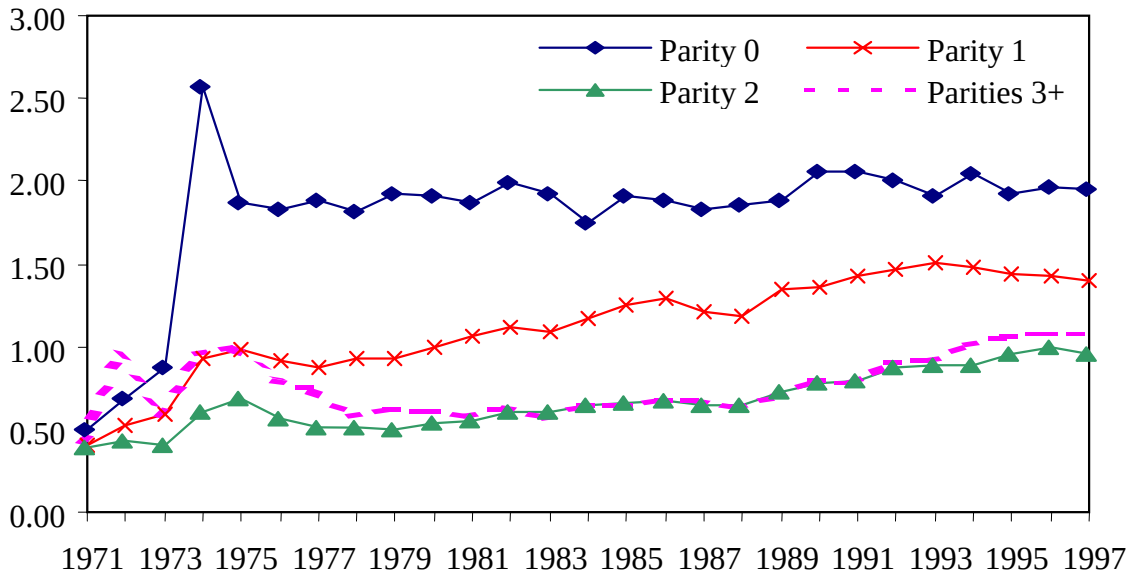
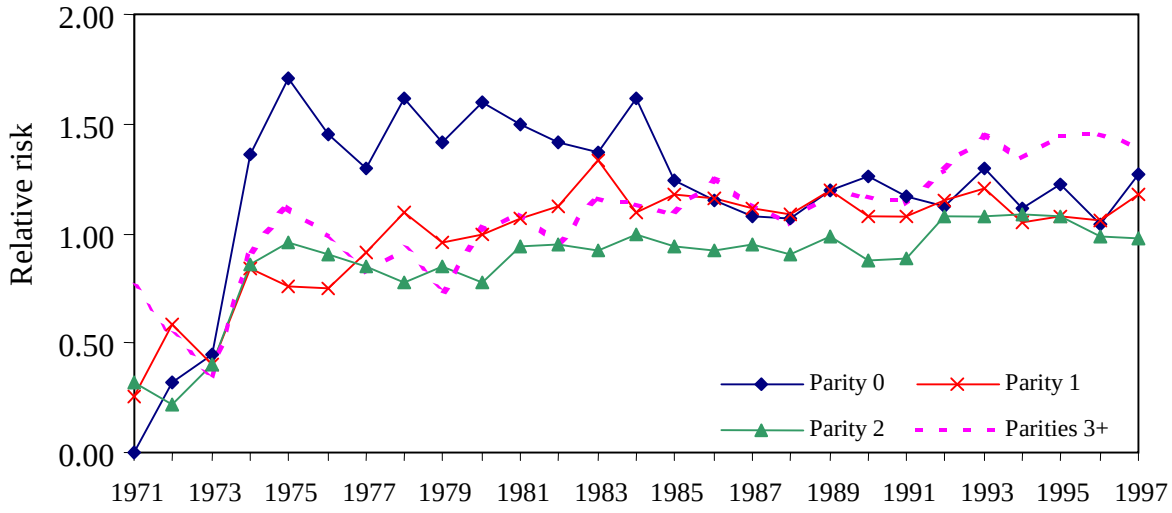


Figure 4: Annual index of divorce risks in later marriages (standardized for age at marriage and marital duration; for mothers also for premarital childbearing and age of youngest child).



Appendix

A 1: Interaction between age at marriage and marital order (standardized for premarital childbearing, combined child factor, calendar year, and marital duration).

	16-19	**20-23**	**24-28**	**29-35**	**36-49**
first	2.89	1.60	1	0.66	0.39
later	9.63	4.36	2.36	1.44	0.92

A 2: Interaction between marital order and premarital childbearing (standardized for age at marriage, combined child factor, calendar year, and marital duration).

	no	**yes**
first	1	1.51
later	2.26	3.52

A 3: Interaction between marital order and parity (standardized for age at marriage, pre-marital childbearing, calendar year, and marital duration).

	0	**1**	**2**	**3**	**4+**
first	2.18	1	0.56	0.46	0.56
later	4.27	2.07	1.48	1.40	1.63

A 4: Interaction between marital order and age of youngest child (standardized for age at marriage, premarital childbearing, calendar year, and marital duration).

	no child	**pregnant**	**0**	**1-2**	**3-5**	**6-8**	**9+**
first	1.54	0.29	0.1	0.45	1	1.11	1.26
later	3.39	1.23	0.57	1.35	2.12	2.60	2.81

A 5: Interaction between marital order and combined child factor (standardized for age at marriage, premarital childbearing, calendar year, and marital duration).

Parity 0 in a first marriage is chosen as the reference level (relative risk = 1).
The relative risk for remarried women without children is 2.14.