

## **THE IMPACT OF AGE AT MARRIAGE AND TIMING OF FIRST BIRTH ON MARRIAGE DISSOLUTION IN CANADA**

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**Résumé** — Diverses recherches récentes ont montré que chez les femmes le jeune âge au mariage est l'une des variables qui permettent le mieux d'évaluer les probabilités de vivre une rupture d'union et ce, peu importe le nombre de facteurs pris en compte. Il demeure toutefois difficile d'isoler l'effet net de cette variable, en raison de la relation étroite qui existe entre l'âge au mariage des femmes et leurs comportements reproductifs (âge à la première naissance, par exemple). L'application de la méthode de l'histoire des événements intégrant des variables variant dans le temps à des données canadiennes récentes démontre que l'âge au mariage exerce toujours un effet significatif net sur la propension des femmes à vivre une séparation. Une fois pris en compte l'âge au mariage, les femmes qui ont conçu leur premier enfant après s'être mariées semblent significativement moins à risque de connaître une séparation que celles qui sont sans enfant ou qui ont initié une grossesse en dehors du cadre du mariage. Chez les premières, le moment de la venue du premier enfant ne semble pas cependant exercer d'effet significatif.

**Abstract** — Past research on marital dissolution has shown that young age of women at marriage appears to be one of the most significant predictors of their later chances of experiencing a separation, even when controlling for various covariates. Because of the strong interrelations between women's age at marriage and childbearing patterns, it remains difficult to disentangle the net effect of each of these factors. Using proportional hazards models with time-varying covariates on recent Canadian data, this research reveals that the timing of marriage still exerts a strong net

influence on the propensity of women to experience marital breakdown. Taking into account age at marriage, women who conceive their first child within marriage appear significantly less likely to experience a separation regardless of timing of birth.

**Key Words** — marriage dissolution, timing of first birth, proportional hazards model, family history survey

The marital histories of both men and women have been altered drastically following the rapid social and demographic changes that have taken place within the last three decades. In Canada, as in most Western countries, the increase in the number of divorces has occurred at the same time as the rate of marriage has declined and the probability of cohabitation has risen. As a consequence, the structure of households and families has become increasingly diversified, and individuals are more likely to experience "family mobility" through the course of their life, that is, to experience several movements from one type of household to another (Roussel, 1987).

Divorces, in particular, have registered a tremendous increase. Following the adoption of the divorce law by Canadian Parliament in 1968, the divorce rates nearly tripled between 1970 and 1983 (C.A.C.S.W., 1987). If it appears difficult to predict the evolution of divorce rates in a more or less near future, some experts estimate that close to 40 per cent of recent marriages could end in a divorce (McKie *et al.*, 1983; Burch and Madan, 1986). Furthermore, taking into account levels of underreporting, Castro Martin and Bumpass (1989) estimated that about two-thirds of all recent first American marriages are likely to end in separation or divorce. As Burch and Madan (1986) noted, divorce is no longer restricted to a distinct social group but now constitutes a risk for most couples.

With this rapid increase in the divorce rate, numerous longitudinal studies have been conducted in several countries during recent years in order to identify the factors that are linked to the probability that couples will experience a marital breakdown. Of all the factors identified as linked to marriage disruption, young age of women at marriage emerges as the most significant predictor, in Canadian as well as in American studies. Young age at marriage precipitates divorce irrespective of the stage in the marital life course (Booth and Edwards, 1985; Morgan and Rindfuss, 1985; Murphy, 1985; South and Spitze, 1986), even when controlling for various covariates (Balakrishnan *et al.*, 1987; Murphy, 1985; Teachman, 1983).

In addition to age at marriage, fertility behaviour appears to have strong implications for marital stability (Heaton, 1990). The number and spacing of children ever born, as well as the timing of births relative to the couple's stage in marriage, seem to play a role. Numerous studies have found that childless marriages experience greater risk of disruption than those with children (Kieran, 1986; Koo and Janowitz, 1983; Morgan and Rindfuss, 1985). Large families also seem to be associated with increased risk of marital disruption. Studies conducted in England and in France showed, however, that compared to the number of children, early childbearing is more significant for the subsequent probability of marital breakdown (Festy and Valetas, 1987; Murphy, 1985).

Despite its importance, studies have only partially taken into account the impact of the timing of childbearing on women's chances of divorce. The presence of a child born before marriage has been shown to influence the probability of women to undergo a separation (Balakrishnan *et al.*, 1987; Billy *et al.*, 1986; Le Bourdais and Desrosiers, 1988; Menken *et al.*, 1981; Teachman, 1983). However, except for premarital pregnancies, no attention has been devoted in Canadian research to the impact of the timing of parenthood within marriage, even though it would make sense to consider this factor as an intervening variable through which the effect of age at marriage operates indirectly. This lack of research appears problematic, particularly in the context of the rapid changes observed in the timing of nuptiality and fertility during the last two decades.

This paper constitutes an attempt to fill this gap. More precisely, it tries to disentangle the net effects of age at marriage and timing of first birth on the probabilities of marital breakdown among Canadian women. In other words, it aims to answer questions like: Are teenage marriages less stable than marriages of older women, even when controlling for timing of first birth? Does the timing of the first child affect the probability that a couple will experience a marital breakdown, regardless of age at marriage? Due to the strong interrelations that exist between age at marriage and childbearing patterns — that is, because “early first marriage and early first birth so often occur together” (Moore and Waite, 1981) — these questions appear difficult to answer without including in the analysis the timing of these events. This is precisely the approach adopted in this paper through the application of the proportional hazards model with time-varying covariates on the data collected in the Family History Survey (FHS) conducted by Statistics Canada in 1984.

### *Factors of Marital Breakdown*

A wide variety of factors has been associated with marital dissolution. In addition to the time trend that has been well documented in the literature (for recent changes, see Castro Martin and Bumpass, 1989), numerous sociodemographic characteristics of women — such as race, religious practice, place of residence or marriage cohort — have been shown to be associated with differential risks of divorce (see, among others, Balakrishnan *et al.*, 1987; Menken *et al.*, 1981; South and Spitze, 1986; Teachman, 1983). Regarding socioeconomic variables, the economic situation of both wife and husband and, in particular, wife's employment characteristics, have been shown to be linked with the probability of divorce (Greenstein, 1990; South and Spitze, 1986). Educational attainment also seems linked to marital instability, but the results vary among studies depending on the controls used in the analyses (Balakrishnan *et al.*, 1987; Le Bourdais and Desrosiers, 1988; Moore and Waite, 1981; Morgan and Rindfuss, 1985; Teachman, 1983). Similarly, studies examining the consequences of cohabitation before marriage on subsequent marital stability have also produced inconsistent results (Balakrishnan *et al.*, 1987; Le Bourdais and Desrosiers, 1988; White, 1987).

Among the numerous sociodemographic factors examined, age at marriage and childbearing patterns appear by far to be the most powerful discriminants between marriages that survive and those that do not. As Murphy (1985) noted, those aspects of behaviour which seem to be more within the couple's control (timing of marriage, length of the first-birth interval) have a more powerful impact on marital breakdown than socioeconomic factors, such as social class, educational level or religion.

### *Young Age at Marriage, Timing of Parenthood within Marriage and Marital Breakdown*

A number of explanations have been advanced to account for the relationship observed between early marriages and marital disruption. They include factors relating to search time for marriage partner, lack of maturity or inadequacy in role performance, and low level of educational and economic resources (for a review, see Booth and Edwards, 1985). Morgan and Rindfuss (1985) have emphasized the degree of change that most persons experience during their late teens and twenties, for example, completing education or establishing a career. More recently, Kiernan's (1986) results suggested that factors which have a

more direct bearing on marital dissolution are latent characteristics, such as personality type which would predispose certain women to marry young.

If the impact of young age at marriage on marital disruption appears widely acknowledged within the literature, the few studies that have analyzed the effects of timing of childbearing have produced inconclusive results (see Morgan and Rindfuss, 1985). Some authors have shown that delaying parenthood could favourably affect marital stability (Kiernan, 1986; Murphy, 1985), while others found that maritally conceived births, regardless of timing, strongly reduce marital disruption (Morgan and Rindfuss, 1985). The association observed between premarital conception and marital breakdown does not appear clear either. Several studies have shown that premarital conception increases the chance of marital disruption, even when controlling for age at marriage (Balakrishnan *et al.*, 1987; Le Bourdais and Desrosiers, 1988; Menken *et al.*, 1981). However, other authors found that women who conceive their first child before marriage do not appear to be at a higher risk of separation than are childless women (Morgan and Rindfuss, 1985; Murphy, 1985).

On the other hand, Morgan and Rindfuss (1985) found no evidence to support the idea that births delayed until several years after marriage provide more protection against separation than do earlier marital births. Analyzing separately the probabilities of marital disruption by marital duration, they found, however, that at short durations (less than four years), the later the first birth (that is, the younger the child at the survey), the lower the likelihood of disruption, regardless of age at marriage. They argued that "couples that delay childbearing actually run higher risks of marital disruption than they would by having a child earlier, because they are without the apparently effective deterrent to disruption that children can provide" (Morgan and Rindfuss, 1985:1075). Koo and Janowitz's study (1983) produced results that support this interpretation. They showed that having a(nother) baby late in marriage (after 12 years or so) could lead to marital problems that result in separation.

Other studies, however, have yielded results that run in the opposite direction (Kiernan, 1986; Murphy, 1985). In a recent study on teenage marriages, Kiernan found that marriage breakdown is less common among couples who started childbearing later. As she noted: "It would seem that the risk of marital breakdown is lower for couples who spend a few years together before becoming parents than for those whose make the transition to parenthood relatively early on in their married lives. Longer first birth intervals also imply older age at parenthood, and this may be as important a factor as duration of marriage" (Kiernan, 1986:44-45). In this sense, a larger interval between marriage and first birth would promote marital stability because, unlike early childbearing, the

couple has time to establish firm bonds and become more financially secure before the arrival of a child. This result runs counter to that obtained by Moore and Waite (1981). Focusing on young women first married by age 24, these authors found that teenage brides who delayed parenthood did not have a significantly lower likelihood of divorce or separation than those who became teenage parents, even when controlling for various social, economic and demographic factors. The structure of the data sets and different aspects of the methodology (estimation of age at first birth, small period investigated) used in this study may, however, be subject to question.

Thus, in general, studies which have taken into account the impact that timing of transition to parenthood within marriage has on the decision to end a marriage have yielded little conclusive evidence. Part of the discrepancy found in the studies may result from differences in the specification of the variables, the sample used, and/or the model developed. Hence, some of the differences observed could be attributed to the definitions used among studies to designate "early" and "late" pregnancies. Early pregnancies have often been confused with teenage pregnancies, even though short intervals between marriage and first birth might occur in the case of women coming from all age groups and experiencing very diverse situations (Spain and Bédard, 1987). Moreover, timing of first birth has also been operationalized differently in the literature, through variables such as age at first birth or interval between marriage and first birth. The use of the former appears problematic, however, in studies aiming to separate the effect of age at marriage from that of timing of first birth, because of the strong correlation between those two variables. In spite of the conflicting results obtained, the different works cited suggest that "unusual" childbearing patterns, such as bearing a child either very early or very late in marriage, might influence marital stability unfavourably. The fact that these births are more likely to be unplanned or to occur in "the absence of common child-related concerns and activities among one's friend" (Koo and Janowitz, 1983:130) could explain why bearing children at "unusual" times in life has resulted in increased rate of marital dissolution.

As some authors noted elsewhere, the causal links between childbearing patterns and marital disruptions could, however, run in the opposite direction. That is, marital instability could possibly exert certain effects — negative or positive — on decisions concerning the number or spacing of births (Murphy, 1985). It has been suggested, for example, that some unhappily married couples could decide, late in marriage, to have a child in hopes of "saving their marriage" (Koo and Janowitz, 1983), in which case their subsequent marital breakdown would be incorrectly interpreted as being caused by their late childbearing.

Obviously, such situations may lead to difficulties in the interpretation of causal effects. Statistical studies can never, based solely on an analysis of the events themselves, recreate the causal dynamics of the underlying processes. Methods which provide an appropriate way for including the timing of events considered do not entirely solve this problem, but they are at least preferable to those that exclusively examine the timing distributions of first births among couples in broken and continuing marriages, in that they give a better insight of the dynamics at work (see Murphy, 1985). Proportional hazards models with time-varying covariates allow such an analysis. (For similar applications, see Murphy, 1985; Suchindran *et al.*, 1985). In the study that follows, this method is applied to the data collected recently in the Family History Survey.

### *Data and Methods*

The data employed come from the FHS conducted in 1984 by Statistics Canada.<sup>1</sup> This survey was carried out as a supplement to the monthly Labour Force Survey (LFS) which provides information on employment and unemployment rates for the Canadian population. The purpose of the FHS was to collect retrospective data on family and working histories. The sample was designed to be representative of the Canadian population of working ages.<sup>2</sup> Among the LFS sample, slightly more than 14,000 respondents aged 18 to 65 were interviewed. The following analysis is restricted to female respondents, that is, 7,256 women who were aged between 18 and 65 at the time of the survey. The FHS collected retrospective data on marital and reproductive histories of women. For each respondent, we know the dates (month and year) of union formations and dissolutions, both for marriages and common-law unions, and the dates of birth of all children ever born. (For more details and a critique of these data, see Burch and Madan, 1986, and Robinson, 1987).

The analysis presented here focuses only on first marriage breakdowns. As in most studies on this topic (Menken *et al.*, 1981; Morgan and Rindfuss, 1985; Murphy, 1985), this paper is interested primarily in the dissolution of the family unit rather than its legal representation. The marriage dissolutions that are taken into account in the analysis thus include both separations and divorces.<sup>3</sup> This procedure might lead to a slight overestimation of marital breakdowns, since some couples who were separated at the time of the survey might reconcile rather than divorce; according to Balakrishnan *et al.* (1987), the bias linked to such an approach would be minor. This method presents, however, the advantage of including into the study the numerous marriage breakdowns which, although final, will not yield a divorce, as well as those which will end in divorce but for

which the judgment had not been pronounced at the time of the survey, because of administrative delay.

The original sample contains 5,491 women who ever married.<sup>4</sup> Among them, 12 per cent had gone through a divorce or a separation at the time of the survey. Because we are first interested in determining the effect of giving birth within marriage on the subsequent chances of women to separate, the analysis further excludes women who had their first child before marrying (344 cases) (see also Heaton, 1990). The analysis is thus first based on 5,147 women who entered into their first marriage before the birth of the first child.<sup>5</sup> In the second step, the analysis is further restricted to a sub-sample of women who married before reaching age 20; in so doing, the authors hope to provide a better understanding of the factors which are associated with marital breakdown among teenage brides.

### *Methodological Strategy*

For various reasons, only the first birth occurring after marriage is considered in the following analysis. The difference between having no children and having one or more children appears to be qualitatively distinct from that between having different numbers of children; in other words, the effects on couples' lives of becoming parents for the first time cannot be compared to the changes caused by the addition of another child (Koo and Janowitz, 1983). Moreover, as Murphy (1985) found in an earlier study, compared to the first birth, the marginal effect of subsequent births appears to be much less important. Finally, handling characteristics such as number of children depending on continuous duration of marriage within the proportional hazards framework presents some methodological problems (Balakrishnan *et al.*, 1987), which go beyond the scope of this paper.

Both the occurrence and the timing of parenthood are examined in relation to marital dissolution. The timing of first birth is operationalized using the length of the interval between marriage and first birth. These authors chose to investigate the interval between marriage and first birth rather than age at first birth because the former is a more direct measure of the timing of parenthood relative to the couple's stage of marriage, and also to avoid multicollinearity problems that emerge when both age at marriage and age at first birth are included in a single model (Moore and Waite, 1981). These variables are entered separately into the analysis as dummy variables. The reference group (that is, the group omitted from the analysis) for the birth interval variable is formed by women who were still childless when the separation occurred or at the time of the survey,

and for the age of women at marriage, it contains women who were aged 20 or 21 when they first married.

Other variables which, in past studies, have been associated with marital breakdowns are also incorporated into the analysis. Completed level of schooling — which might influence both timing of marriage and of childbearing — is included as a control variable in all models presented. In addition, the effect of cohabitation before marriage is examined in certain models. To account for the impact of wife's employment characteristics on marital breakdown, the number of years worked before marriage is also included. Other correlates of marriage disruption that have been identified elsewhere in the literature (religion, race or type of residence) could not, however, be included in the analysis because no such data were collected in the LFS. This should not be too important since our analysis focuses more precisely on the impact of specific aspects of marital and reproductive histories on marital breakdown and since other variables have been shown to have only a limited effect (Murphy, 1985).

The proportional hazards model, also known as Cox's model, is used for the analysis.<sup>6</sup> This method combines both the life table approach well known to demographers and the multiple regression method commonly used by sociologists. It permits the analysis of women's risks of separating in relation to time (that is, duration of marriage), and as a function of various individual characteristics which are then conceived of as factors increasing or decreasing their probabilities of experiencing this event (Balakrishnan *et al.*, 1987). This method solves the problems of "censoring" attached to incomplete event histories, that is, cases for which the information is incomplete: for example, married women who were still not divorced at the time of the survey or those whose marriage was ended by death of the spouse. The number of women exposed to the risk of separation is then re-evaluated at each point in time and excludes, as they appear, cases for which the information is censored (Allison, 1984).

When the transitions being analyzed (in this case, the divorce transitions) have gone through a "period fluctuation," problems of lack of proportionality do, however, arise. "By definition, such a fluctuation will occur at systematically different durations for cohorts of entry to risk — destroying the assumption of a common duration function" (Castro Martin and Bumpass, 1989:38). In other words, marriage cohorts differed in their propensity to experience separation in terms of marriage duration; women married before the mid-1960s presented, for instance, a "disproportionally" lower risk of marital dissolution at early duration than later marriage cohorts. Obviously, this situation is due to the fact that divorces were much harder to obtain before the adoption of the divorce law by Canadian Parliament in 1968.

To take into consideration the rising trend of divorce over time (Thornton and Rodgers, 1987) — that is, to correct for the lack of proportionality observed in the data — we introduced a dummy variable — varying with time (see below) — into the analysis. More precisely, this variable aims to isolate from other covariates the increasing risk of divorce attached to the sole fact of living a marital relationship in the 1970s rather than in the 1960s.<sup>7</sup> We do so by creating a variable that takes the value of “0” for all durations of marriage occurring before 1969, and the value of “1” from then on, until 1984, the year of the survey.

In a proportional hazards model as in life tables, the probability that an event will occur in the small time interval  $(t, t + \Delta t)$  or the “instantaneous hazard rate” is calculated. The hazard function  $h(t)$ , which summarizes the series of instantaneous hazard rates, becomes the dependant variable of the regression analysis. In its simplest form, the hazard function can be expressed as:

$$h(t) = H_0(t) \exp(\beta z) \quad (1)$$

where  $h_0(t)$  is the “common (‘baseline’) hazard function which gives the pattern of duration dependence common to all individuals” (Murphy, 1985:444) and where  $\beta$  is a vector of unknown parameters and  $z$  is a vector of covariates. When dummy variables are used in the model, the reference group’s hazard function is the baseline function. Each  $\beta$  coefficient of equation (1) then represents the relative risks of separation of other groups in relation to the reference group (see Balakrishnan *et al.*, 1987).

Several independent variables included in the analysis that follows take a fixed value over the whole duration considered. This is the case, for instance, for cohabitation before marriage or completed level of schooling.<sup>8</sup> A more complex situation occurs when one wants to analyze the impact of variables whose value changes over time. For example, such a situation occurs in the study of the effect of giving birth within marriage on women’s chances of separation. Logically, the arrival of a birth should be considered as a risk factor to the union only from the moment — in terms of marriage duration — at which it occurred; before that date, the woman should be characterized as being childless. The inclusion of such a variable that changes over time thus permits the estimation of the relative chances of a woman to experience a separation after giving birth to a child from that point onward, in comparison to a woman who presents the same characteristics but is still childless.<sup>9</sup>

The estimated coefficients presented in Table 1 represent  $\exp(\beta)$ . A coefficient larger than unity thus indicates that women with a given characteristic have

TABLE 1. ESTIMATES OF PROPORTIONAL HAZARDS MODEL COEFFICIENTS<sup>1</sup> ON MARITAL BREAKDOWN, CANADA, 1984

Variable <sup>2</sup>	Category	MODEL					
		1	2	3	4	5 <sup>6</sup>	6 <sup>6</sup>
Period effect (married before 1969) <sup>3</sup>	no	2.75*	2.75*	2.63*	2.65*	2.61*	2.59*
Level of schooling (12-13)	≤11	0.78*	0.74*	0.76*	0.74*	0.75*	0.74*
	postsecondary	0.98	1.06	0.99	1.07	1.06	1.07
	university	0.74*	0.93	0.76	0.94	0.93	0.92
First birth <sup>4</sup> (no)	yes	0.77*	0.67*				
Birth interval <sup>4</sup> (no birth)	0-7 months			1.32*	1.00	1.03	1.01
	8-11 months			0.63*	0.58*	0.59*	0.59*
	1 year			0.67*	0.60*	0.60*	0.60*
	2-3 years			0.67*	0.61*	0.69*	0.64*
	4+ years			0.76	0.70*	0.71*	0.71*
Age at marriage (20-21)	< 20		1.42*		1.34*	1.31*	1.31*
	22-24		0.70*		0.71*	0.70*	0.68*
	25 +		0.48*		0.49*	0.45*	0.40*
Cohabitation before marriage <sup>5</sup> (no)	yes						1.23
Work experience before marriage (has not worked or has worked less than 1 year)	1-5 years						0.91
	6+ years						1.16

Sources: *Family History Survey* (1984). Based on a sample size of 5,147 ever-married women.

1. The coefficients given in the table represent  $\exp(\beta)$ . The symbol "\*" indicates that coefficients are significant at the 0.05 level.
2. The reference category is given in parentheses.
3. Time-varying variable which takes the value of 0 for all marriage durations occurring before 1969, and the value of 1 from then until 1984, year of the survey.
4. Time-varying variable which takes the value of 1 if the respondent reports a birth before or at the duration of marriage considered; it takes the value of 0 for childless women and for women who had not given birth at the given duration.
5. Refers to cohabitation with husband. The variable takes the value of 0 for women who did not cohabit with the person they married.
6. Excludes 209 cases for which information on entering or leaving the labour market is missing.

greater chances of separation than women of the reference group; a coefficient smaller than one indicates that they have lower chances.

## Results

Table 1 examines the impact of the occurrence and timing of the first birth within marriage on women's probabilities of experiencing a separation. The effect of these two variables is first presented in a basic model which includes, in addition to these variables, the "period effect" and the level of schooling of women (models 1 and 3); a second model which also comprises the age of women at marriage is further examined (models 2 and 4).

As can be seen in model 1 of Table 1, giving birth to a child within marriage is significantly linked to a lower risk of separation. When controlling for "period effect" and for education, women who gave birth to a child after marriage have a 23 per cent (1 minus 0.77) lower risk of facing a marital breakdown than childless women. An examination of the coefficients of the other variables included in model 1 reveals, on the other hand, that the fact of living in a marital relationship after 1968, instead of in 1968 or earlier, more than doubles the chances of a woman to experience a separation. This period effect does not vary significantly between the different models considered.

Compared to their counterparts who finished high school, women who completed 11 years or less of schooling are nearly 20 per cent less likely to experience a marital breakdown when controlling for "period effect" and presence of a child. Interestingly, this coefficient observed for less educated women remains stable through the models, no matter which variable is taken into account in the analysis. Women with more years of education also present a lower risk (26 per cent) of marital breakdown than respondents with a high school degree but, as opposed to the previous group, this difference is significant only in the first model presented in Table 1. In fact, the inclusion of age at marriage in the equation tends to bring the value of the university degree coefficient near "1", which indicates that part of the lower risk associated with highly educated women is due to their differential behaviour in terms of age at marriage.

Since the level of schooling attained is known only at the time of the survey and not for various points through the respondents' marital histories, it is difficult to evaluate to what extent the lower risk of separation associated with low level of schooling is due to this characteristic *per se*<sup>10</sup> or if it is the result of a selectivity process, women who divorced being more inclined to return to school and to increase their education than those who remained married. The

fact that women who completed at least a post-secondary level of schooling are not significantly more at risk of experiencing a marital breakdown than the reference group (12 to 13 years) casts doubt, however, on the selectivity hypothesis. This higher degree of marriage stability among less educated women could then be seen as reflecting differential attitudes regarding marriage, family and work. For example, these women may be less able to find the type of job that would bring them economic independence and work fulfillment and allow them to break more easily an unsatisfactory relationship. Additional research is needed to shed more light on this issue.

Model 2 of Table 1 shows that the significant protective effect of a birth on a woman's chances of separation not only persists but increases when age at marriage is taken into account. The inclusion of this variable in the equation slightly increases the gap that separates childless women from women with children, the coefficient changing from 0.77 to 0.67. This result is attributable to the fact that these two variables are closely linked together; that is, to the fact that women who married at young ages (for example, at 20-21, as the reference group) are more likely to give birth (see Kiernan, 1986; Murphy, 1985), but are also more at risk of experiencing a separation, as several studies have shown (Balakrishnan *et al.*, 1987; Le Bourdais and Desrosiers, 1988; Menken *et al.*, 1981; Teachman, 1983). On this issue, the second model of Table 1 reveals that even when controlling for period effect, schooling and presence of a child, women who married before turning 20 years old faced greater risks of separation. Compared to women married at age 20 or 21, they are 42 per cent more likely to see their marriage dissolve, while women married at age 25 or older clearly present a lower risk. The birth of a child and age at marriage are thus two variables that both seem to play an important role in affecting women's probability of experiencing a marital breakdown.

The two subsequent models (3 and 4) attempt to disentangle the impact of the timing of parenthood, measured in terms of interval between marriage and first birth, on marriage dissolution. The birth interval coefficients presented in Table 1 compare the risks of divorce experienced by women following a birth, in relation to those who are without children. Except for women who gave birth to their first child less than eight months after marriage, the coefficients of model 3 show that, when controlling for period effect and education, the risks of marital breakdown are always smaller (between 24 and 37 per cent) among mothers, regardless of the timing of the first birth. The inclusion of age at marriage in model 4 contributes, as in model 2, to increasing slightly the gap separating women with and without children, except for those who had their first child less than eight months after marriage. This last coefficient then becomes non-sig-

nificant. What it means is that when age at marriage is considered, women with a premarital pregnancy are no longer characterized by a higher risk of separation than are childless women; they are still, however, more at risk of divorce than women conceiving their first child within marriage. Obviously, this result is linked to the lower age at marriage of women who experienced a premarital pregnancy.

On the other hand, the inclusion of timing of the first birth rather than its sole occurrence modifies slightly the effects of young age at marriage. The gap that separated women who married before reaching 20 from those married at 20 or 21 is then reduced from 1.42 to 1.34, while the coefficients of women who married after 21 remain more or less unchanged (compare models 2 and 4). The changes observed in the coefficients of younger brides, while not considerable, indicate that a portion of the effect attributed previously to young age at marriage reflects, in part, a difference in the timing of the first birth.<sup>11</sup> However, given the little change in the coefficients observed when comparing models 2 and 4 in Table 1, it does not seem that the greater risk of young brides can be explained by this fact (see also Murphy, 1985). In other words, age at marriage appears to exert a strong effect on marital dissolution that persists, regardless of the timing of motherhood.

The coefficient associated with cohabitation before marriage, presented in the last model, shows that women who lived a consensual union with the partner they later married are 23 per cent more likely to experience a marital dissolution than those who did not. However, the coefficient is not significant at the 0.05 level. This result runs counter to that obtained by Balakrishnan *et al.* (1987), in their study of marital dissolutions in Canada, where they found that women who cohabited before marriage had a significant 50 per cent higher risk of marriage dissolution than those who did not. However, it should be mentioned that the association observed between probabilities of divorce and cohabitation before marriage varies among studies, depending on the types of controls retained or the definitions and measures of cohabitation used in the various surveys (for Canada, see Burch, 1985; White, 1987). Although not considered here, duration of cohabitation could also influence probabilities of marital dissolution among Canadian women (Aumont, 1987; Burch and Madan, 1986).<sup>12</sup>

The inclusion of the variable "work experience before marriage" in model 6 reveals that women who have worked six years or more before marriage present a 16 per cent higher risk of divorce than women who have worked one year or less before marriage.<sup>13</sup> However, once again the coefficient is not significant. This latter result contrasts with a previous study which found that women with long premarital work experience present a significantly higher probability of

marital dissolution (Greenstein, 1990). Other variables related to work experience — such as wife's employment status or wife's hours worked — would have to be taken into account in order to distinguish between women who experienced a marital breakdown and those who did not (Greenstein, 1990; South and Spitze, 1986).

To summarize, the results presented here indicate that young age at marriage exerts a strong and significant influence on women's propensity to experience a marital breakdown, even when controlling for various covariates. When taking age at marriage into consideration, childbearing patterns do not appear to have as clear an effect: women with premarital conception do not seem more likely than childless women to experience a marital breakdown; but these two groups of women exhibit a higher likelihood of marital disruption than women who conceive their first child within marriage. The effect of these covariates, as well as the impact of education, appears generally robust, as exemplified by the lack of variation following the inclusion of additional controls (compare models 5 and 6).

#### *Marital Breakdown among Teenage Brides*

Table 2 examines the effects associated with the same variables as those presented in Table 1 but for a sub-sample of women who married before age 20. This analysis aims to provide a more comprehensive understanding of the factors associated with marital breakdown among teenage brides. As observed for all ever-married women, the fact of living a marital relationship after the introduction of the divorce law in 1968 increases importantly the risks of separating: other things being equal, women involved in a marriage after 1968 have a probability of divorcing that is two and one-half times greater than those living this type of relation before 1969. On the other hand, respondents with lower educational levels appear less likely to experience a marital breakdown. Irrespective of the model considered, the propensity of divorce among women with 11 years or less of schooling is about 30 per cent lower than that of their counterparts who finished high school. Women with at least some post-secondary level of schooling do not, however, seem significantly more at risk of facing a separation than this last group.

Except for the period effect, the coefficient associated with low level of schooling is the only one significant at the 0.05 level. Thus, at first sight, premarital characteristics, such as cohabitation or work experience before marriage, do not seem to play a significant role in explaining marital breakdown among teenage brides. In her study on teenage marriages, Kiernan (1986) also

TABLE 2. ESTIMATES OF PROPORTIONAL HAZARDS MODEL COEFFICIENTS<sup>1</sup> ON MARITAL BREAKDOWN FOR WOMEN MARRIED BEFORE AGE 20, CANADA, 1984

Variable <sup>2</sup>	Category	MODEL			
		1	2	3 <sup>8</sup>	4 <sup>8</sup>
Period effect (married before 1969) <sup>3</sup>	no	2.63*	2.57*	2.58*	2.61*
Level of schooling <sup>4</sup> (12-13)	≤ 11	0.66*	0.66*	0.68*	0.68*
	postsecondary +	1.08	1.09	1.13	1.13
First birth <sup>5</sup> (no)	yes	1.11			
Birth interval <sup>5</sup> (no birth)	0-7 months		1.31	1.40	1.39
	8-11 months		1.13	1.25	1.25
	1 year		0.95	0.98	0.99
	2-3 years		0.95	1.03	1.03
	4 + years		0.89	0.97	0.97
Cohabitation before marriage (no) <sup>6</sup>	yes				0.80
Work experience before marriage (has not worked worked or has worked less than 1 year) <sup>7</sup>	1+ year				0.88

Source: *Family History Survey* (1984). Based on a sample size of 1363 ever-married women.

1. The coefficients given in the table represent  $[\exp(\beta)]$ . The symbol \*\*\* indicates that coefficients are significant at the 0.05 level.
2. The reference category is given in parentheses.
3. Time-varying variable which takes the value of 0 for all marriage durations occurring before 1969, and the value of 1 from then until 1984, year of the survey.
4. Respondents with postsecondary and university years of schooling have been grouped in the same category, because of the small number of women who attended universities.
5. Time-varying variable which takes the value of 1 if the respondent reports a birth before or at the duration of marriage considered; it takes the value of 0 for childless women and for women who had not given birth at the given duration.
6. Refers to cohabitation with husband. The variable takes the value of 0 for women who did not cohabit with the person they married.
7. Respondents with one year or more of premarital work experience have been included in the same category because of the small number of women who worked 6 years or more before marriage.
8. Excludes 64 cases for which information on entering or leaving the labour market is missing.

found that very few premarital characteristics differentiated teenage brides whose marriages broke down from those that survived. However, she argued that "the process of family building and the social and economic context in which it operates act as determinants of marriage survival" (Kiernan, 1986:53). Delaying childbearing later, in particular, would be associated with a lower risk of marital disruption among younger brides.

Although not significant, the coefficients associated with first birth intervals, presented in Table 2, suggest that becoming a parent very soon after marrying could increase the likelihood of marital disruption: not only are premarital conceptions associated with higher risks of divorce but so are early pregnancies following marriage. This result takes on some importance considering that early childbearing often accompanies teenage marriages. Data from the FHS reveal, for example, that by their first wedding anniversary, more than one-third (38 per cent) of teenage brides included in the analysis had a child compared with 23 per cent of the women who married in their early twenties. Interestingly, one should also note that, although not significant, the experience of cohabitation before marriage tends to decrease the risks of divorce among teenage brides, while it has the opposite effect for all ever-married women. According to the different arguments put forward in the literature to account for the association observed between early marriage and marital breakdown, cohabitation could exert a "protective" effect among women who marry young, by allowing them to know better their partner and to test a relationship which first appears fragile. In White's terms, cohabitation could act "as a transition stage between the loosely defined roles of dating and the prescribed roles in marriage" (1987:647).

To summarize, the characteristics of teenage brides whose marriages broke down do not seem very different from those of their counterparts whose marriage survived, but these results (or lack of results) could be attributable to the few number of cases under study here or to the fact that women who marry young form a very homogeneous group. As Moore and Waite argued, it may be that "many factors which buffer the marriages of those who wed at or near the typical age do not protect those who marry while very young" or that "those who marry young disproportionately possess attitudes or personal characteristics that dispose them to divorce" (1981:35). Clearly, additional research is needed to understand the processes that underlie marital disruption among young Canadian brides.

### Conclusion

In general, this analysis of the factors influencing marital breakdowns confirms the important role of the timing of marriage and the occurrence of parenthood in determining the likelihood of marital disruption. As expected, young age at marriage is associated with a higher risk of separation, while the presence of a child is linked to a lower risk. Although the arrival of a child represents a major transition, the types of changes experienced and their consequences for marital stability might depend more on the timing of the conception relative to marriage (sequence) than on the length of the first-birth interval (timing) as such (see Morgan and Rindfuss, 1985). Unlike some studies (see, for instance, Murphy, 1985), the findings in this paper provide no evidence to support the hypothesis that later childbearing provides greater protection against separation.

A surprising result was that the presence of children could be associated with less stable marriages among teenage brides. This higher risk is not, however, significant and appears associated only to very rapid entry into parenthood or, in other words, to a very small interval between marriage and first birth (less than one year). It could be argued that such births are more likely to be unplanned or that these young couples did not have enough time to establish firm bonds before the arrival of a child.

More generally, children do seem to deter separation. As some authors argue, it may be that children add some positive aspect to the marriage or that children increase the costs of dissolution. It is also possible that couples achieving the most stable marriages are those willing to have children within marriage (Waite *et al.*, 1985). Without more qualitative data, it remains difficult to identify the causal mechanisms that link the arrival of the first child and marital stability.

Clearly, additional research which attempts to provide more insights into our understanding of women's marital and reproductive histories is necessary. The negative impact of young age at marriage on marital stability, revealed by various studies, could operate indirectly through factors which are not available in our data, such as husbands' characteristics. Other aspects of childbearing patterns, such as age of children (Heaton, 1990; Koo and Janowitz, 1983), as well as the effects of changes in education level or in socioprofessional status on the part of both spouses, also require further attention.

Additional research, while important in its own right, assumes further significance when one considers that, in addition to influencing their propensity to divorce, young age at marriage or early childbearing can have far reaching implications for a woman's later socioeconomic conditions. As certain studies

have clearly indicated, the fact of undergoing a divorce still represents the principal factor of impoverishment of women (Duncan, 1984; Weitzman, 1985).<sup>14</sup> The negative socioeconomic consequences of separation and divorce might be even more accentuated for teenage brides whose marriages broke down rapidly, leaving them with young children to support and less internal or external resources for coping with the exigencies and deprivations associated with marital dissolution (Hofferth, 1984; Kiernan, 1986; Marini, 1984).

What does the future hold? Will the changes noted in the mean age at first marriage or the delay of childbearing modify women's probabilities of separation? While Morgan and Rindfuss (1985) found no evidence of changing effects on marital disruption associated with variation in age at marriage and parenthood status, this situation could change in the future. The growing dispersion observed in the timing of first birth and in age at marriage across cohorts (Bloom and Trussell, 1984), as well as the increasing proportion of childless couples, could render more common and more acceptable situations previously attached to marginality, and thus potentially decrease the risks of marital disruption among certain groups. As long as "it is increasingly acceptable to have marriage without parenting" (Romaniuc, 1984:35), childlessness, for example, could be no longer associated with higher rates of marital disruption (Carlson and Stinson, 1982). On the contrary, as Castro Martin and Bumpass (1989) observed for the 1970-1985 period, one might think that the relative risks of separation or divorce noted among women first married when they were teenagers will in fact increase over time, as "young" marriages become atypical, contrasting with the dispersion of marriages over a wide range of ages. Future research on "marital" dissolution will, of course, have to study the outcomes of consensual unions as they become more frequent and touch an increasing proportion of women, with or without children.

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Footnotes

1. For a more detailed presentation of the data, see Burch (1985) and Robinson (1987).
2. As with the LFS sample, the FHS sample excludes residents of Yukon and Northwest Territories, members of the armed forces, residents of Indian reserves and institutions, and foreign diplomats (Robinson, 1987).
3. In the following discussion, we use the terms *separation* and *divorce* interchangeably.
4. Nine cases had to be excluded from the analysis because of missing data on the types of marital breakdowns (death of the spouse, separation, divorce).
5. The impact of premarital births on marital dissolution has been investigated by the authors elsewhere (see Le Bourdais and Desrosiers, 1988). It should be mentioned that the proportion of women with premarital births excluded from the present analysis is higher among the younger cohort (women who were less than 25 years at the survey). This result makes sense since there has been a substantial increase in the proportion of first births occurring outside of marriage during the last two decades (O'Connell and Rogers, 1984). However, this exclusion does not seem to affect substantially the coefficients presented in Tables 1 and 2.
6. The analysis has been conducted with the SURVREG (Survival Analysis with Regression) statistical program developed by Preston and Clarkson (1983). This program has been selected over others, such as BMDP2L or PHGLM from SAS, because it allows for the treatment of weighted data and the inclusion of time-varying variables (see text below).
7. This cutoff point is, in a way, arbitrary since the dissolution rates (including divorce and separation) started increasing in Canada before the adoption of the divorce law in 1968. However, the liberalization of the law resulted in a greater increase of the rates during the 1970s than during the 1960s. For this reason, the year following the adoption of the law in 1968 appears the most appropriate choice.
8. Since women's level of schooling might vary through time, it would have been preferable to adjust for this variable as it changed through the marriage duration; unfortunately, the level of schooling completed at the time of the survey is the only information available.
9. When the model includes time-dependent variables, the hazard function can be written as

$$h[t, z(t)] = h_0(t) [\exp \beta z(t)]$$

For a presentation and discussion, see Suchindran *et al.* (1985).

10. One could also argue that this finding results from a cohort effect, older generations of women tending both to be less educated and less inclined to divorce. Separate analyses, including age cohorts in the equation, still pointed to the same conclusion, however.
11. Data from the FSH show, for instance, that 20 per cent of our sample who married before age 20 were pregnant at marriage, compared with nine per cent of those married between ages 20 and 21 and six per cent or less for those who married later (these percentages exclude women with premarital births).
12. For example, using the FHS, White (1987) found that premarital cohabitation has a positive effect on marital stability. However, his analysis does include male respondents and exclude respondents who cohabitated with a partner other than the one they married. Recent Canadian

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data suggest in fact that younger cohorts tend to adopt similar behaviours in terms of divorce, no matter if they experienced or not cohabitation before marriage (Aumont, 1987).

13. It should be noted that since the FHS did not collect information on the month of entry on the labour market, it is impossible to distinguish between those who started working before marriage and those who started working after marriage, if entry in the labour market occurred during the same year as marriage. For this reason, they are all included in the reference group with women who did not join the labour force before marrying.
14. Although Hoffman and Duncan (1988) disagree with Weitzman's (1985) estimation of the extent of the decline of women's economic status after divorce, both studies recognize the serious negative economic consequences of divorce for women.

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