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Tracing the Life Courses of Canadians

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Abstract

This paper examines the life courses of Canadians through an event history analysis of data from the 1990 General Social Survey on Family and Friends. The sequences and the timing of transitions into various life course stages, and the durations of stay in those stages are analyzed through multiple-decrement life tables. Changes in the life courses over 10-year birth cohorts from 1910 to 1970 and differentials by gender are highlighted in the paper. The analysis reveals that what is traditionally thought of as a "typical" life course is experienced only by one-fourth to one-third of a cohort. With the increasing diversity of life course stages among younger cohorts, it would no longer be adequate to consider only the "typical" life stages in future analyses.

Résumé

Le présent article examine le cours de la vie des Canadiens d'après une analyse de données historiques tirées de l'Enquête sociale générale de 1990 sur la famille et les amis. Les séquences et le moment de survenue des transitions conduisant à différentes étapes de la vie, et la durée de ses étapes sont analysés au moyen de tables de mortalité à multiple extinction. L'article note les changements survenus sur des cohortes de naissance de 10 ans de 1910 à 1970 et les différences selon le sexe. L'analyse révèle qu'un quart à un tiers de la cohorte seulement estime vivre ce qui est généralement qualifié de vie «typique». Compte tenu de la diversité grandissante des étapes de la vie parmi les cohortes plus jeunes, il ne conviendra peut-être plus de considérer seulement les étapes de vie «typiques» dans les analyses futures.

Key Words: life course, event history techniques, General Social Survey 1990, multiple decrement tables, competing transitions

Introduction

In the study of life courses, the timing of entry into and the length of stay in each stage have been the focus of demographic research (see for example, Glick, 1977; Norton, 1983). In Canada, Rodgers and Witney (1981) replicated the work of Glick (1977) on family life course in the United States. They computed the median ages at various 'periods of the family career' (including median age at first marriage, birth of first child, birth of last child, marriage of last child, and death of spouse) and compared them with those obtained for the United States. Data from censuses and vital statistics allowed a comparison of these measures for birth cohorts from the 1880's to 1950's. More recently, Gee (1986) examined the life courses of Canadian women from around 1830 to 1960.

However, the classical formulation of life course as conceived of by pioneers of the approach (see for example, Hill and Rodgers, 1967; Duvall and Miller, 1985) and as described in studies such as those of Glick (1977) and Rodgers and Witney (1981) has its limitations. In particular, there are two main weaknesses of this approach: (1) It covers only the 'typical' or the 'traditional' types of life course (Norton, 1980; Hohn, 1987). This limitation has become even more apparent in the recent period of rising rates of separation and divorce, common law union, and remarriage. (2) It uses unsatisfactory and incorrect estimates of parameters (such as timing of entry into and duration of stay in each stage of the life course). The easy and simple way of estimating the duration between two events (for example, first marriage and first birth) as the difference between the mean ages at these events is incorrect.[1]

This paper illustrates an approach to overcome these weaknesses through an event history analysis of data from the Canadian 1990 General Social Survey on Family and Friends. The sequences and timing of transitions into various life course stages, and the duration of stay in those stages are analyzed through multiple-decrement life tables. Changes in the life courses over cohorts and differentials by gender are also highlighted in the paper.

Data: 1990 General Social Survey

The General Social Survey Canada (GSS 1990) on Family and Friends (Cycle 5) interviewed 13,495 men and women aged 15 to 80 (excluding the residents of Yukon and Northwest Territories and full-time residents of institutions) and collected information on their biographies including home-leaving, marriages, separation and divorce, death of spouse, births and

home-leaving of their children (Statistics Canada, 1991). Questions on dates or ages when the events of interest occurred yield retrospective data. These data are used in tracing the paths or transitions in the life course stages of men and women classified by 10-year birth cohorts from 1910 to 1970.

The use of retrospective data has limitations. The data may be plagued by recall errors, particularly among older women and men. And, there may be a problem of representativeness of the sample in that the survey excludes those who have died, emigrated, or been institutionalized. The assumption that they would have gone through similar experiences as those included in the survey may not be tenable for all the events included in this study.

Methodology: Event History and LIFEHIST Package

The following analysis uses event history techniques applied to retrospective data on events, the occurrences of which are considered stochastic. Transitions among states are very often dependent on previous transitions made in the past (and not only in the immediately preceding state) or on transitions made in another system. This type of interdependence of transitions can be examined by preserving the whole history of (preceding) events. This study traces the paths taken by members of a cohort through the various stages of a life course by producing multiple decrement life tables. The sequences of transitions and the various parameters (such as timing of entry into each stage) are computed through LIFEHIST, a computer program, details on which can be found in Rajulton (1991), and Rajulton and Balakrishnan (1990).

The life course stages included in this analysis are: (1) leaving the parental home, (2) first cohabitation or common-law union, (3) first marriage, (4) first separation and/or divorce, (5) death of spouse, (6) second marriage, (7) birth of first child, (8) birth of last child, (9) home-leaving of first child, and (10) home-leaving of last child. The analysis starts from age 15 in an origin state, thus making a total of 11 states. Different sequences of transitions through these states can be identified. A "typical" life course would move from launching to family formation to family extension to family contraction to empty nest. There can be many deviations from this typical life course. For example, home-leaving may be followed not by first marriage but by first birth (a birth out-of-wedlock), or by first cohabitation (an increasing trend among young adults). Or, death of spouse or separation and divorce can disrupt a union.

This paper presents only those sequences with a maximum of six transitions.

Higher order sequences (with seven or more transitions which occur mostly with changes in marital status) have the problems of small number of cases. For practical purposes, we will present only those transitions and sequences of transitions which we consider significant, given the proportion of persons experiencing them. This does not mean that those sequences not presented here are lost to the analysis; they are still kept as competing transitions in the analytical framework. In particular, this paper focuses on the *conditional probabilities* of reaching certain stages and on parameters that capture the *timing* of transitions. The calculations of probabilities have been corrected for censoring.

Conditional Probabilities of Transition

Since our analysis preserves the transitions made in the past, we can examine the different paths taken by a cohort through the life course stages. For example, in the transition from first marriage to first birth, we can focus our attention on only those who left home, got married, and proceeded to have their first child and contrast them with those who got married, then had a child without leaving the parental home.

Table 1 presents the conditional probabilities of what shall be termed here as the "classic" life course transitions (Panel 1) and contrasts them with a life course which involves cohabitation before marriage (Panel 2). The classic life course passes through the following sequences of transitions:[2]

- first is the *launching* stage or the transition from origin (age 15) to leaving the parental home (O-HL),
- the second is the *formation* stage or the transition from home-leaving to first marriage (HL-FM),
- the third is the *extension* stage or the transition from marriage to first birth (FM-FB),
- the fourth is the *completed extension* stage or the transition from first birth to last birth (FB-LB),[3]
- the fifth is the *contraction* stage or the transition from the last birth to home- leaving of the first child (LB-FHL),
- and the last is the *completed contraction* (the empty nest) stage or the transition from home-leaving of the first child to home-leaving of the last child (FHL-LHL).

Table 1 shows the asymptotic conditional probabilities of transiting from one state to another. These are the probabilities that a specific transition will *eventually* occur in a particular cohort. For example, for the 1910-20 cohort of men, the probability of transition from origin (O) to home-leaving (HL) is

TABLE 1. ASYMPTOTIC CONDITIONAL PROBABILITIES OF TRANSITIONS* FOR MEN AND WOMEN CLASSIFIED BY BIRTH COHORTS, 1990 GENERAL SOCIAL SURVEY, CANADA.

Transitions	1910-20	1921-30	1931-40	1941-50	1951-60	1961-70	1910-20	1921-30	1931-40	1941-50	1951-60	1961-70
			MEN						WOMEN			
Panel 1:												
1. O-HL	0.788	0.796	0.821	0.803	0.822	0.744	0.773	0.763	0.774	0.806	0.770	0.733
2. HL-FM	0.858	0.889	0.881	0.789	0.542	0.403	0.852	0.916	0.925	0.845	0.620	0.380
3. FM-FB	0.819	0.857	0.907	0.870	0.883	0.878	0.810	0.883	0.919	0.877	0.896	0.834
4. O-HL-FM-FB	0.554	0.606	0.656	0.551	0.393	0.263	0.533	0.617	0.658	0.597	0.428	0.232
5. FB-LB	0.752	0.835	0.859	0.837	0.906		0.811	0.824	0.875	0.863	0.882	
6. O-HL-FM-FB-LB	0.417	0.507	0.564	0.462	0.357		0.432	0.509	0.576	0.516	0.379	
7. LB-FHL	0.928	0.933	0.833				0.903	0.890	0.841			
8. FHL-LHL	0.708	0.751	0.715				0.619	0.658	0.692			
9. O-HL-FM-FB-LB- -FHL-LHL	0.274	0.355	0.336				0.242	0.298	0.335			
Panel 2:												
10. O-HL				0.803	0.822	0.744				0.806	0.770	0.733
11. HL-FC				0.124	0.378	0.487				0.080	0.305	0.555
12. FC-FM				0.838	0.673	0.764				0.502	0.735	0.671
13. FM-FB				0.610	0.824	0.963				0.619	0.776	0.699
14. O-HL-FC-FM-FB				0.051	0.172	0.267				0.020	0.134	0.190

* See text for abbreviations.

0.788 (in column 2, row 1). The table also gives the probability of transition through a sequence of states. Thus, the probability of transition from origin to first birth among those who left home, got married and had first birth is 0.554 (column 2, row 4). This is obtained by multiplying the preceding asymptotic conditional probabilities (0.788 x 0.858 x 0.819). The following discussion focuses on the probabilities of sequences of transitions.

As shown in row 4 of Table 1, the probability that men of the oldest cohort (1910-1920) followed the sequence of leaving home, getting married, and having their first child is 0.55. This probability increased to 0.61 in the next cohort, reached its peak of 0.66 in the 1931-40 cohort, declined to 0.55 in the 1941-50 cohort, and reached a low probability of 0.26 in the 1961-70 cohort. The trend among women is similar, starting with a probability of 0.53 among the oldest cohort, reaching a peak of 0.66 among those born during the 1930's and a low of 0.23 in the 1961-70 birth cohort.

If the above sequence (leaving home, marrying, having a first child) leads further to having a last child (other than the first child - see footnote 3), it has a probability 0.42 among the oldest cohort of men (row 6) and 0.43 among the oldest cohort of women. The trend across cohorts is again an increasing-decreasing one for both men and women. The highest probabilities are found among those born during the 1930's: 0.56 for men and 0.58 for women, and the lowest among those born during the 1950's. Since the 1961-70 birth cohorts would not have had the time to complete childbearing as of the survey date, they are not included in the table.

Row 9 of Table 1 presents the probabilities of going through the classic sequence, that is, from launching to the empty nest stage. These are presented only for the three oldest cohorts that would have had the time to go through this sequence. As shown in row 9, these probabilities are not very high as one would expect. The oldest cohort of men has only a 0.27 probability, and the next two cohorts 0.36 and 0.34, respectively. The corresponding probabilities for women are 0.24, 0.30 and 0.34. Thus, what is traditionally thought of as "typical" life course is experienced only by one-fourth to one-third of a cohort.

An examination of competing transitions and sequences of transitions (not shown here) sheds light on the levels of probabilities, the trends over cohorts, and the gender differences. For example, in the older cohorts, we observe a direct transition from origin to first marriage, while still living in the parental home.[4] The probabilities of this transition are greater for women than for men, and the trend is a decreasing one across cohorts. Similarly, among older cohorts, we also observe a predominant competing

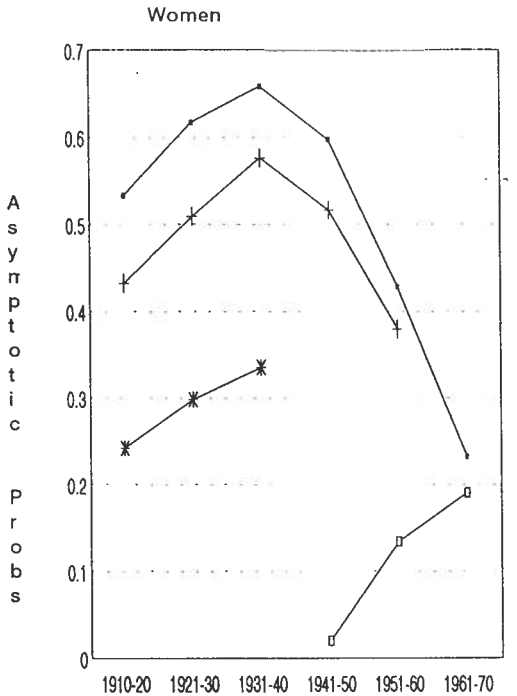
transition in later stages, namely to widow(er)hood. This probability is higher among women than among men, and follows a decreasing trend over cohorts. This is due to the increasing longevity of men and women, with that of men still lagging behind women.[5] These two competing transitions (direct transition from origin to first marriage and transition to widow(er)hood) are the main contributors towards the increased incidence of the classic sequence until the 1931-40 birth cohorts.

Had the above-mentioned transitions been the only major competing transitions, the probabilities of the classic sequence would have continued to increase also for the younger cohorts. But another competing transition has gained prominence among the younger cohorts—the transition from leaving the parental home to first cohabitation. As Panel 2 (row 11) of Table 1 shows, the 1941-50 cohort of men had a 0.12 probability of transition from home-leaving (HL) to first cohabitation (FC). This probability increased to 0.38 and 0.49 among the men born during the next two decades. A similar increasing trend holds true also for women whose probabilities are .08, .31 and .56 for the corresponding cohorts. The increase in the (conditional) probability of cohabitation following home-leaving is so phenomenal that it is higher than the probability of first marriage following home-leaving among those born in the 60's (0.48 versus 0.40 for men and 0.56 versus 0.38 for women). As a result, the sequence O-HL-FC-FM-FB has an increasing trend (row 14) from among those born after World War II. Figure 1 depicts some of these interesting patterns along with the classic pattern.

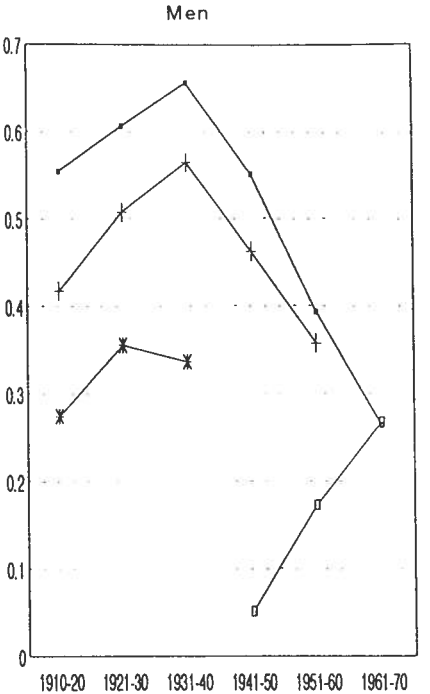
Another dominant competing transition occurring among these younger cohorts is the one involving separation and divorce. As with widow(er)hood, to present the transition to separation/divorce requires tracking down several sequences of transitions. The probabilities of transition to separation/divorce are generally higher among younger cohorts. For example, separation/divorce directly following first marriage without any births (that is, the sequence O-HL-FM-FSD) is three times higher for men born in the 60's than for men born in the first quarter of the century.

To summarize, the classic sequence, which attained its peak probability in the 1931-40 birth cohorts, has only minor variations: a competing transition to first marriage in the early stages and to widow(er)hood in the later stages of the life course. This classic sequence has been replaced in the younger cohorts by the competing transitions to first cohabitation in the early stages and to separation/divorce in the later stages of the life course. The younger cohorts, however, have not yet established a path or sequence that can be called "typical".

FIGURE 1. SELECTED LIFE COURSE STAGES, GSS CANADA, 1990.



O-HL-FM-FB	0.533	0.617	0.658	0.597	0.428	0.232
O-HL-FM-FB-LB	0.432	0.509	0.576	0.516	0.379	
O-HL-FM-FB-LB-FHL-LHL	0.242	0.298	0.335			
O-HL-FC-FM-FB				0 02	0.134	0.19



O-HL-FM-FB	0.554	0.606	0.656	0.551	0.393	0.263
O-HL-FM-FB-LB	0.417	0.507	0.564	0.462	0.357	
O-HL-FM-FB-LB-FHL-LHL	0.274	0.355	0.336			
O-HL-FC-FM-FB				0.051	0.172	0.267

Figure 2A: Mean Ages at Transition, Men
From Origin to Home-Leaving of the Last Child
Cohorts 1910 to 1940

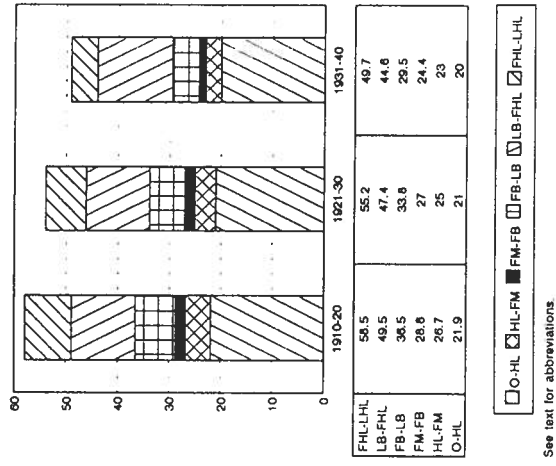
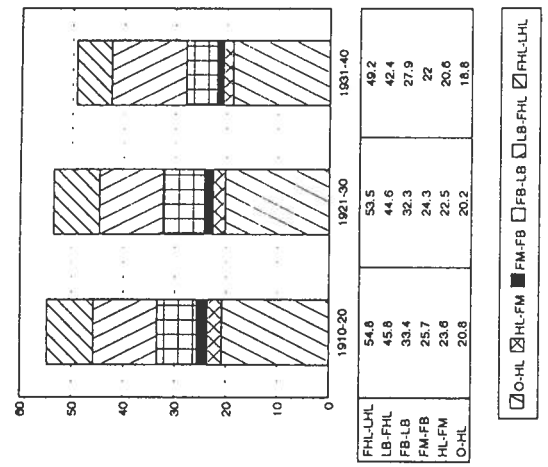


Figure 2B: Mean Ages at Transition, Women
From Origin to Home Leaving of the Last Child
Cohorts 1910 to 1940



Timing of Transitions

As mentioned in the Introduction, a weakness of studies that estimate the timing of life course events from censuses and/or vital statistics is that the estimates are computed from wrong sets of persons. Availability of event history data enables us to make better estimates from those cohort members who have gone through the *same* sequence of life course stages.

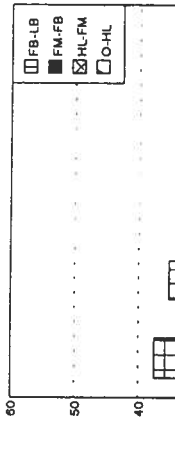
As seen earlier, only 25 to 30% of men and women undergo the classic sequence of transitions. Figures 2A and 2B show the mean ages at transition into various stages. Men born in 1910-20 left home at age 22, married at 27, had a first child at 29 and the last child at 36. They were 50 years old, on the average, when the first child left home and 58 when the last one left. The next cohort (1921-30) of men experienced these events at younger ages; on the average, they left home at age 21 and reached the empty nest stage at age 55. Men born during the 1930's for whom the last set of estimates of timing can be made, went through these stages at even younger ages: they were 20 years old upon leaving home, and their last child left before they reached age 50.

Expressed differently, the oldest cohort of men took, on the average, 37 years from their own home-leaving to arrive at the empty nest stage. The next two cohorts took a much shorter period of 34 and 30 years, respectively. The periods spent between transitions were also shorter for men born during the Depression. The only exception is the duration between the last birth and the home-leaving of the first child, which has steadily increased from 13 years for the 1910-20 cohort to 15 years for the 1931-40 cohort.

Women went through the various life course stages at younger ages than men, but the patterns of mean ages at transition and durations between transitions among the three older cohorts are similar to those of men. The oldest cohort of women left home, on the average, at age 21, married at 24, started childbearing at 26 and ended it at 33, launched their first child at 46 and their last child at 55. Thus, they spent a total of 34 years from their own launching to the empty nest stage. The next two cohorts took 34 and 30 years, respectively for passing through the same life course stages. As with men, the periods between transitions became shorter from cohort to cohort, except the period between the last birth and launching of the first child.

To allow comparison over several cohorts, the mean ages at transition can be estimated only until the last birth. As Figures 3A and 3B show, the trend is similar to that of the complete life course stages of the older cohorts. Among both men and women, the transitions were experienced at younger ages by the younger cohorts. For example, men in the oldest cohort (1910-20) left home at age 22, and had their last child at age 38.[6] In contrast, the corresponding mean ages for the 1951-60 cohort are 18 and 28, respectively; members of this cohort being aged only 30 to 40 at survey date, their mean age at last birth is only a rough estimate. A similar inference can be made for women.

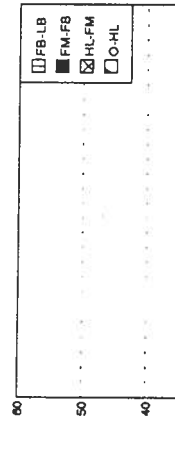
Figure 3A: Mean Ages at Transition, Men
From Origin to Birth of the Last Child
Cohorts 1910 to 1960



	1910-20	1921-30	1931-40	1941-50	1951-60
FB-LB	37.5	35.2	31.6	28.2	27.5
FM-FB	28.9	27.4	25.5	23.7	24.5
HL-FM	26.8	25.3	23.6	21.9	21.6
O-HL	22.2	21.3	20.4	19.5	18.2

See text for abbreviations.

Figure 3B: Mean Ages at Transition, Women
From Origin to Birth of the Last Child
Cohorts 1910 to 1960



	1910-20	1921-30	1931-40	1941-50	1951-60
FB-LB	34.5	33	29.4	26.2	25.6
FM-FB	25.6	24.3	22.7	21.1	21.5
HL-FM	23.6	22.4	21.2	19.8	19.6
O-HL	21	20.1	19.3	18.6	18.4

See text for abbreviations.

Discussion

The economic and social influences on the timing of life course events among the older cohorts of Canadians are not difficult to identify. Gee (1986), for example, points out that a relatively later age at first marriage and a high percentage of celibates among the older Canadian women simply

followed the "European" pattern of marriage. This pattern continued until early in this century. The economic difficulties would also have contributed to the late ages at family formation among the oldest cohorts of men and women (1910-20) who reached maturity during the Great Depression. In contrast, the economic affluence during the post-war periods, the weaving of social safety nets, and the greater participation of women in the paid labour force contributed to lowering the ages at early life course events among later cohorts. Another major influential factor is the decrease in the average number of children, leading to a shorter period spent in childbearing and childrearing.

A more difficult endeavour, however, is to divine the *trend* in the life courses of the younger cohorts. The classic life course stages are no longer adequate for the younger cohorts. Many men and women born during and after the 1960's, for example, leave parental homes to cohabit rather than to first marry. A "typical" life courses of younger cohorts will then have to include a stage of cohabitation, and with the rising divorce rates, a stage of separation and divorce, and of remarriage.

A more comprehensive analysis of life courses in the future must cover vastly diverse sequences. The complex life courses of those who will go through a number of cohabitations, divorces, remarriages, and rearing and launching of both natural and step children. Researchers will then be challenged to identify one or many "typical" life courses for which timing can be estimated. A major challenge will be to identify within and across cohorts, the factors that influence the sequential structures of transitions which would call for new techniques analyzing event history data.

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Footnotes

1. Feichtinger (1987:81) aptly remarks: "There are many possibilities to calculate erroneous measures of intensity and the tempo of the life cycle, and indeed some of these mistakes occur in the literature. Let us mention two examples of wrong estimates. Firstly, it is obviously not correct to calculate the average period of widowhood as the difference of the (further) life expectancies of wife and husband....Secondly, and more important, the differences between successive mean ages or durations are meaningless, since the succession of averages applies to a continually changing set of persons. It is, for example, not correct to determine the mean duration of marriage at first birth as the difference between the age at first (legal) birth and the

age at marriage, since both ages refer to different universes of persons."

2. These stages are similar to those identified by Glick (1964), the only difference being that instead of starting with *Formation* as stage 1, we start with *Launching* or leaving the parental home. And, as mentioned earlier, we confine ourselves to a total of six transitions. We thus exclude the last stage, *Dissolution,* among these classic life course stages (see also Hohn, 1987).

3. An individual with only one child does not undergo this transition from first birth to last birth and therefore, strictly speaking, does not undergo the typical sequence which implies having more than one child.

4. The asymptotic conditional probabilities of transition from origin to first marriage are:

	1910-20	1921-30	1931-40	1941-50	1951-60	1961-70
Men:	.184	.173	.124	.124	.071	.031
Women:	.196	.209	.189	.157	.112	.043

These probabilities are not presented here because transition to widow(er)hood occurs at various later stages of the life cycle, and would involve tracking down several sequences of transitions by cohort and gender.

These mean ages for the three older cohorts are not the same as those presented in Figures 2A and 2B. Because these means are now computed from a greater number of individuals from a cohort, some would go on to experience the classic sequence, others would follow sequences. The fact that the mean age at last birth is higher than presented in Figure 2, highlights two points: (1) substantively: those who went through the classic sequence form a select group in that they might have experienced the transitions earlier; while others are more likely to have gone through widow(er)hood. (2) Technically, estimates of timing of life course stages made from all the members of a cohort, regardless of the paths of transitions they follow (as when estimates are made from censuses and vital statistics), can be different from the estimates made from those who did go through a specific sequence of events.

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