FERTILITY AND MARRIAGE PATTERNS IN CANADA: 1851-1971

by

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ABSTRACT

This research is concerned with reconstructing and analyzing the history of fertility transition in Canada from 1851 to 1971. The Canadian fertility transition, viewed from a four stage framework, is examined within the context of demographic transition theory, with the aims of delineating both the common and the unique features of the Canadian experience and of ascertaining the theoretical implications of the findings concerning Canadian transition.

Canadian census and vital statistics data are used solely. Corrections to the early birth data are made, utilizing the survival rate method with adjustments, based on stable population models, made for the under-enumeration of population under age 5. Also, census data on population distribution by age and marital status by age are adjusted, by interpolation, in instances when such data are presented in too highly aggregated form to allow for desired analyses.

The overall trend of fertility change in Canada displays a pattern in which early, i.e., commencing at the middle of the nineteenth Century, declines are registered, followed by a period of plateau, and then a period of fluctuation until the decade of the 1960s when rapid decline occurs. By analyzing the separate components operating to

affect this overall trend, it is found that marital fertility plays the major role, one of substantial and consistent decline. The deviations from decline in overall fertility that occur result from the operation of a second component, female nuptiality. Together, the variables of marital fertility and female nuptiality function to determine the particular nature of the fertility transition in Canada, the unique features of which are early, large-scale decline followed by a period of constancy.

These two variables are examined separately, and in detail, in an effort to ascertain possible causal influences operating to determine level and trend. Marital fertility is found to be affected by different variables over time. Marital fertility levels, at early periods, are closely related with cultural variables, i.e., ethnicity and religion. Over time, these variables lose their importance, replaced by economic-related variables. The heightened overall fertility in the post - World War II period is not accompanied by a general or significant increase in completed family size; rather, timing differences are largely responsible. Certain sub-populations of women in Canada, however, are characterized by noticeable increases in completed family size. The women so characterized are women who, prior to the "baby boom," display relatively low levels of marital fertility, i.e., women of British ethnic origin, of Protestant religion, and of high levels of

educational attainment.

The examination of female nuptiality in Canada reveals a transition from the low levels that historically characterized western European populations to relatively high levels. The course of nuptiality change in Canada is found to be affected by migration patterns. Whereas in the past, nuptiality in strongly affected by the variable of ethnicity, major convergence has occurred throughout the course of this century.

A number of theoretical implications result from this research, and can be divided into two types. There are, first, implications relating to the Canadian transition itself. Much of the uniqueness of the Canadian experience surrounds the issues of culture and migration patterns. As such, there was not "one" fertility transition in Canada, but several, stemming from differential combinations of marital fertility and nuptiality behaviour that various groups brought with them to Canada. Second, the findings here relate to a number of debates existing within demographic transition theory.

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CHAPTER I

INTRODUCTION

Demographic transition, as the term implies, is concerned with changes over time in population-related variables. One such variable is fertility,[1] which has implications for population growth and age composition which, in turn, are consequential in relationship with economic, political, and social factors. The relationship of fertility and fertility change with a wide range of demographic and non-demographic factors has resulted in the relegation of the study of fertility to an important place in both demographic and sociological spheres.

The study of fertility can be, and has been, approached in various ways, including orientations which are primarily descriptive, analytical, explanatory, or predictive; dynamic, focussing upon change over time, or static, where temporal patterns are of little importance; macro, concentrating upon the structural aspects of fertility, or micro, focussing upon individual behaviour. This research aims at describing, analyzing, and, to a lesser extent, explaining fertility change in Canadian society over a time period spanning the years from 1851 to

1971. Thus, it can be said that the major concern here is to reconstruct and analyze the history of fertility transition in Canada.

Both pragmatic and theoretical concerns dictate the relevance of the above-stated aim. From the pragmatic point of view, an understanding of the structure of, and the processes involved in, fertility decline in a given society, like Canada, can be helpful in delineating the steps necessary to implement decline in societies that have not commenced to attain, or are still in the process of achieving, sustained low fertility. Although one would hesitate to directly apply the findings of the fertility experience of one population to another (Caldwell, 1976: 336; Okediji, 1974:12), it can be argued that certain aspects may be of relevance, generalizable to other contexts. A second practical implication of the research here is related, not to international concerns, but to the home base. It can be argued that the paucity of research concerning Canadian society[2] both reflects, and exacerbates, a society fraught with problems of national identity. Canadian-based research can serve to ameliorate this situation through providing an understanding of, and appreciation for, the Canadian experience.

The research aim, as stated, places this study within the province of theoretical concerns known generally, and loosely, as "demographic transition." As

Demeny (1968:502) states, the central concern of modern demography is demographic transition, change from high to low vital rates,[3] both as description and as theory. Descriptively, the aims are to ascertain the timing, place, and speed of fertility reduction from pre-decline levels. Theoretically, it seeks to explain the described path of change.[4] Although a consensus seems to exist concerning what aspects of fertility change lie within the domain of description and, hence, explanation, considerable disagreement exists as to the content of explanation.

In its broadest formulation, demographic transition theory relates fertility transition with socioeconomic development or modernization. The transition from a traditional agrarian society to a modern urban one is seen as the cause of natality decline (Beaver, 1975:8), as modernization operates to alter the social structural elements that facilitate the production of large numbers of children.[5] However, the theory does not specify any precise empirical relationship between level of socio-economic development and level of fertility. Efforts to establish an empirical relationship between level of modernization and timing of fertility decline in the European case, for example, have met with failure (van de Walle and Knodel, 1967). What demographic transition theory lacks in precision, though, is countered by its undeniable correctness in identifying a general relationship

between fertility change and modernization (Coale, 1973:64).

The general applicability of demographic transition theory, in conjunction with its lack of precision, has given rise to a number of theoretical debates concerning the mechanisms that underlie the transition to modern levels of fertility.

One debate centres on the relative importance of cultural as opposed to socioeconomic factors in the determination of fertility decline. Some statements of demographic transition theory attribute a minor role to cultural values and tradition in the course of fertility decline, viewing them as reflections of the social and economic structure rather than independent causal factors (Burch, 1975:130; Davis, 1963). Similarly, viewpoints that stress economic rationality as the driving force behind human behaviour, and that see fertility decline as a result of changes in the constitution of rational behaviour that accompany socioeconomic development (Ryder, 1967:32), are assigning cultural factors an unimportant role in fertility transition. On the other hand, some recent statements of demographic transition theory emphasize the role of culture as an independent causal influence in determining the course of fertility decline. Perhaps the most explicit assertions along this line are those of Coale (1973:62-7) who indicates that the fertility differentials[6] in Europe that cannot be explained by

recorded socioeconomic characteristics can be traced to traditions and habits of mind associated with ethnic background, language, and religion. Other researchers provide interpretations emphasizing cultural variables, religion and ethnicity in the case of Demeny (1968:520-1) and religion in the case of Livi-Bacci (1971:129), in affecting early declines in fertility in the absence of significant modernization, i.e., in underdeveloped portions of Europe. Also, it can be argued that data indicating large differentials in fertility in pre-modern Europe[7] (Coale, 1969:9-10) suggest the action of cultural factors in determining fertility level.

Another debated issue is that concerning the relative importance of contraceptive technology, as distinct from reproductive motivation, in determining fertility decline.[8] Advocates of the technological school argue that increasing availability, and knowledge, of effective contraceptive methods is a prime determinant of reduced fertility. For example, Sweezy (1975:6) argues that high fertility in third world countries is unwanted, resulting from the inaccessibility of family planning facilities. Similarly, Westoff (1973:19) interprets recent declines in fertility in the United States as the result of improvements and innovations in contraceptive technology that have made possible the control of unwanted births. On the other side is the motivational school, which views

reduced fertility as a function of changing motivations concerning reproduction that accompany social and economic development. This view has adherents amongst students of fertility transition in both third world populations (Demeny, 1975; Okediji, 1974) and developed societies (Blake and Das Gupta, 1975). While the motivational school does not deny the importance of contraceptive technology as a factor in reducing fertility, it views its role as a facilitating one rather than a causal one.[9]

Another theoretical debate concerns the process by which the behaviour of fertility control is introduced and spread throughout a population. The debate concerning introduction was brought to the foreground by Carlsson (1966) who, on the basis of the analysis of Swedish data primarily, argues against the implicit assumption that he attributes to demographic transition theorists, that sustained fertility decline commences after the introduction of a new or innovative type of behaviour, family limitation. For Carlsson, deliberate control of fertility is not a new social invention; declining fertility represents the adjustment of an already-established behaviour to new forces concomitant with industrialization. Knodel (1977), on the other hand, argues that fertility transition results from the spread of the innovative behaviour of family limitation.[10]

Arguments concerning the spread of fertility control

behaviour differ in the extent that diffusion is seen as operative and what elements are viewed as important in the diffusion process. In regard to the second issue, sometimes the spread of information about contraceptive practices is stressed (Carlsson, 1966:150); sometimes the emphasis is upon ideas, aspirations and attitudes (Demeny, 1968:520). In regard to importance of diffusion, some theorists doubt its relevance and the significance of leading and lagging sectors in fertility transition (Carlsson, 1966:152); others place great emphasis on the diffusion process, stressing spread of fertility limitation behaviour from leading sectors to lagging sectors (Coale, 1973:67; Demeny, 1968: 519; Knodel, 1977:247).

A new set of debates has emerged in demographic transition theory following the incorporation of marriage as an important variable, in large part the result of Hajnal's (1965) analysis of marriage patterns in Europe. Hajnal identified an historical pattern of marriage behaviour, unique to western Europe until around 1940 when it started to break down, characterized by high average ages at marriage and high proportions never married, which operated to deflate fertility levels in Europe. This finding had both theoretical and methodological implications. Methodologically, researchers came to clearly separate marital fertility and nuptiality and to measure their independent effects upon fertility level and trend.

Theoretically, European fertility transition came to be viewed from the perspective of a two-stage framework. The first stage, known as Malthusian transition, witnessed the development of the unique marriage pattern that served to lower fertility levels; the second stage, known as non-Malthusian transition, saw the advent of control of fertility within marriage, the reduction in levels of marital fertility (Coale, 1973:57).

One debate concerns the nature of the relationship between control of fertility within marriage, on the one hand, and proportions married, on the other. Coale (1969: 16) has argued that a causal relationship exists such that the achievement of a high degree of control of fertility within marriage led directly to an increase in proportions married. Van de Walle (1968:499), on the other hand, views the relationship as one in which declines in marriage age necessitated a change in marital fertility behaviour.

Thus, demographic transition theory contains disagreements concerning the issues of the relative importance of cultural as opposed to social and economic factors, the relative role of contraceptive technology as opposed to motivational factors, the introduction and spread of fertility control, and the relationship between marital fertility and nuptiality. However, a consensus does exist that modernization operates to determine fertility change. The disagreements seem to revolve around

which aspects of the modernization process are viewed as especially important. In part, disagreements stem from the variable findings that have come to light as a result of the study of fertility change in national and sub-national populations. As Coale (1969:19) indicates, findings are so varied, indicative of the great complexity involved in the process of fertility change, that only an optimist would expect to find an easy generalization that can account for fertility decline.

In light of Coale's statement, one cannot expect that the analysis of Canadian fertility transition will lead to a definitive statement about the nature of the process of fertility decline in general or to a resolution of the issues that are debated within demographic transition theory. However, the study of Canadian fertility change should prove instructive in delineating the kinds of factors involved in one context and, hence, provide some statement concerning the processes at work in fertility decline.

In fact, Canadian society provides us with a demographic laboratory that, due to characteristics unique to Canada, allows for an examination of the role of certain factors in fertility decline that is not possible in other populations. Although all societies have distinctive features in their histories that account, to some degree, for uniqueness in the pattern of fertility decline, Canadian

society in its historical development has characteristics so singular in nature that it is anticipated that the course of fertility decline will reflect that distinctiveness.

The distinctive feature of Canadian society in its historical development, that makes possible the examination of special factors in transition and leads to the anticipation of uniqueness in fertility transition, is the role played by, and the characteristics of, immigration in the Canadian experience.

Canada, as a European-derived population, has been characterized by successive waves of immigration. The waves *per se* are not of particular importance here, but one characteristic of the wave-like movement is. The pattern of settlement in Canada was one in which different ethnic groups tended to enter at specific periods of time, partially a result of specific "push" factors operating in different parts of Europe[11] at different times and partially as a result of Canadian immigration policy.

Initial European penetration was French, occurring in the 1600s, with settlement largely concentrated in the central region of Canada and aimed at the establishment of a "new" France. The British were the second European group to settle within Canada, gaining control over the French areas following the Seven Years' War. Initial in-migration of British-origin peoples into Canada was, in the main, via two distinct routes; from the United States, United Empire

Loyalists entered Canada following the American Revolution, and from Great Britain, direct movement, in significant numbers, occurred at the end of the Napoleonic Wars. Also, the British-origin population in Canada was augmented by an influx of Irish escaping famine conditions in the 1840s. In-migration of British-origin population was so great that by the middle of the nineteenth Century, the size of that population in Canada exceeded that of the earlier-arriving French population. However, the different geographical locations of the two population groups within Canada, the French in Quebec and the British in the Maritime provinces and Ontario, meant that the French majority in Quebec was never threatened numerically.

The in-migration of peoples from western Europe,[12] particularly Germany, began in the nineteenth Century, primarily after the Napoleonic era, a response to population pressures in the home areas. The immigration of eastern Europeans occurred later, in the early years of the present century, was concentrated in time, and was characterized by localization in area of settlement. The early decades of the twentieth Century saw a change in immigration policy such that previously non-preferred European people, i.e., persons other than western Europeans, were allowed relatively easy entrance into Canada. This policy change reflected a Canadian concern with populating the western, rural parts of the country with agriculturalists, in

conjunction with a lessened propensity for western European rural populations to emigrate, given a rapid industrialization that allowed for their absorption into industrial employment at home. The result was a large-scale in-migration of people from eastern Europe, where surplus rural populations could not so easily be absorbed, into western Canada, particularly the prairie provinces.

In more recent years, the Canadian population has continued to be augmented by in-migration, with immigrants largely drawn from the population pools that characterized earlier settlement,[13] but with increased proportions of southern Europeans and non-Europeans. However, what is important here is that earlier settlement was characterized by what one could call discreteness, i.e., different ethnic groups tended to enter Canada at different periods of time and to settle in geographically distinct regions.

The significance of this feature lies in its dictating a Canadian society that was characterized by no common traditional pattern in terms of fertility and fertility-related behaviour. Rather, a number of patterns existed, transplanted from home environments different from one another in cultural tradition and in extent of social and economic modernization at time of departure. It seems likely that discreteness in timing of in-migration and in areas of settlement would operate to perpetuate, to some degree, lack of commonality in behavioural patterns.

Demographic transition is usually conceived as involving a change from "the" traditional to "the" modern, in terms of patterns of behaviour that are consequential for fertility level. However, such a conceptualization is inapplicable in the Canadian case. Thus, the study of Canadian fertility transition lends itself to an examination of factors that do not present themselves in other populations. It is expected that the analysis of these factors will, to some degree, account for uniqueness in the trend of Canadian fertility decline and will have some relevance in relation to the issues debated within demographic transition theory. In regard to this last point, the role played by cultural factors in the trend of fertility change can be analyzed in a somewhat novel way in the Canadian case, given the ethnically-related pattern of migration.

Given these introductory comments, it is necessary to delineate in more detail what is to follow. To repeat, the major concern here is a reconstruction and analysis of the history of Canadian fertility transition. As such, the focus is primarily upon demographic analysis rather than sociological analysis. This is not to say that sociological variables, concepts, and considerations are ignored, but rather that their inclusion is somewhat secondary to the main task at hand.

As an analysis of fertility trends requires, by

definition, information that extends back into time and as the quality of collected data deteriorates markedly as one moves back into history, a necessary first step is the correction of faulty data. The following chapter outlines the general problems incurred with the earlier Canadian data, and discusses the corrections made to the birth data for the period up to 1941 and the adjustments made to data concerning age-sex distribution and marital status.

Chapter III examines the levels and trends of Canadian fertility, employing a four stage framework, within the context of demographic transition theory. Each stage is discussed separately, focussing upon the fertility characteristics of each period and possible associated factors.

Having described the path of fertility change in Canada, Chapter IV sets out to more fully examine the determining elements. Overall fertility is divided into its constituent parts, marital fertility, non-marital fertility, female nuptiality, and age-sex compositional factors, in order to assess the extent that change in each component plays in the Canadian transition over the entire period under consideration, and in each separate stage of fertility.

As the component analysis indicates the overwhelming importance of the variables of female nuptiality and marital fertility in the Canadian fertility transition, Chapters V

and VI, respectively, are devoted to these topics separately.

Chapter VII, the last substantive chapter, presents a framework that seems to prove useful in the understanding of the Canadian experience in fertility transition. The focus is upon the unique features of fertility change in Canada, viewed from a perspective that relates together three characteristics of Canadian society: cultural diversity, a pattern of immigration related to ethnicity, and the lack of traditional patterns of demographic behaviour.

Footnotes

[1]The term "fertility" is used to denote the actual reproductive performance of a woman or group of women. It should be distinguished from "fecundity," which denotes the physiological capacity to conceive and bear children (Thompson and Lewis, 1965:240).

[2]The only large-scale contemporary research concerning fertility at the national level is the Henripin study, a 1961 Census Monograph (1972). This can be contrasted with the United States, for example, where national fertility studies are numerous.

[3]Demographic transition theory, in the broadest sense, is concerned with both fertility change and mortality change and their interrelationships. However, recent research has focussed primarily upon the fertility aspect, in part because fertility exerts the greater influence on future population patterns and because fertility has been found to be more sensitive to social influences. This research similarly concentrates on the fertility component, partially for the above reasons and, also, because of severe data limitations concerning past levels of mortality in Canada.

[4]And to predict future change, based upon those explanations.

[5]The linkages between social structural changes accompanying modernization and decreases in fertility are more explicitly outlined in Chapter III.

[6]Differentials in marital fertility, particularly in timing of decline.

[7]Which cannot be explained by differences in breastfeeding behaviour or health.

[8]A discussion of this debate, with fuller references, is provided in Blake and Das Gupta (1975).

[9]This debate has implications over and above theoretical ones. Population policy differs depending upon which model is accepted by policy-makers and funders. Also, the politics of population tend to polarize on this issue, as was evident at the United Nations Conference on Population in 1974 in Rumania. There, a sharp division could be observed between the "technologists" or family planners, called neo-Malthusians by the opposition, and the motivationalists, whose slogan was "Take care of the people, and the population will take care of itself."

[10]"Family limitation," for Knodel, refers to parity-specific fertility control.

[11]And the United States.

[12]Non-British and non-French.

[13]However, French immigration has never been significant since the initial period of settlement. Also, immigration of eastern Europeans, particularly since World War II, has been blocked by policies operative in those countries. One exception, though, was the in-migration of Hungarian refugees into Canada during the mid 1950s.

CHAPTER II

THE CANADIAN DATA

Census-taking on a regular basis began in Canada in 1851. Although New France (Quebec) is credited with the first census of modern times (1665-66), census-taking after the British Conquest was sporadic, the responsibility of colonial governors. In 1847, an Act of the United Provinces created a Board of Registration and Statistics which was responsible for collecting and disseminating statistics (Coats, 1923:1-2). Therefore, beginning in 1851-52, census data are available on a ten year basis.[1]

However, census information for all Canadian provinces is not available from this early date. In the pre-confederation Census of 1851-52, only Upper Canada (Ontario) and Lower Canada (Quebec) were covered;[2] in 1861, data for New Brunswick and Nova Scotia became available also. In the first Census of (confederated) Canada in 1871, these four provinces were enumerated. In the 1881 Census, Prince Edward Island, Manitoba, and British Columbia were included and, in 1891, Saskatchewan and Alberta were added. Newfoundland, which became a Canadian province in 1949, was covered in the censuses from 1951 onwards. Thus, it was not

until 1951 that census coverage for all ten Canadian provinces was attained.[3] As no complete set of provincial data exists for the period from 1851 to 1971, comparability is hampered by lack of available data. On a more positive note, once the Canadian census included a province, that province continued to be enumerated in all following censuses. Therefore, for each province there exists an uninterrupted set of data, within the constraints of the types of information collected in any given census year.

Until 1921, when a nation-wide[4] vital registration system was instituted, data concerning vital events were collected by the censuses. However, these data proved to be so unreliable that the Census of 1911 abandoned their collection (Brower et al., 1956:94). With the advent of the vital registration system, the accuracy of vital data improved markedly as a result of the requirements imposed by the system. As a condition for entry into the national registration system, each province had to demonstrate that registration was at least 90 percent complete (Brower et al., 1956:95).

Thus, information on total births was obtained from two sources: the Canadian censuses and, from 1921 onwards, the Vital Statistics Reports. Apart from the variation in reliability of information contained in these two sources, they differ in the types and consistency of data provided. In the Censuses of 1851-52 to 1881 and the Census of 1901,

data on total births during the year prior to the date of the census[5] were given. In the Censuses of 1891 and 1911, no data concerning births were provided. In the censuses which did present information on births, the type of information varied. Data on births by sex were provided in the Censuses of 1851-52 to 1881; births by month of occurrence as well as data on stillbirths were available only in 1871 and 1881. At no time in the census coverage of births was information presented concerning births by age or marital status of mother.

More detailed information on births and other vital events was made available by the published Vital Statistics Reports. Births were cross-tabulated by age and marital status of mother; data concerning birth order, illegitimacy, stillbirths, infant mortality, and age at marriage became available on an annual basis. Also, the Censuses of 1941, 1961 and 1971 provided data concerning number of children ever-born to ever-married women, as a supplement to the information on annual births available in Vital Statistics Reports.

Thus, data concerning births are available from 1851-52 onwards, at least for some provinces, with the exception of 1891 and 1911. However, the data extracted from the earlier Century censuses cannot be accepted at face-value. As noted above, the Census of 1911 discontinued their collection because of unreliability. Not only were

births undercounted, but also a certain degree of confusion surrounds the census treatment of stillbirths. As stated previously, the Censuses of 1871 and 1881 provided separate information on number of stillbirths. But, in the other census years, it is not known if stillbirths were included as births, as deaths, or were ignored. Also, none of the nineteenth century censuses provided data concerning illegitimate births. It remains an open question as to whether these births were included in, or omitted from, the census counts of births. In view of these ambiguities and the certainty of birth undercounts, the census data on births were abandoned in favour of new estimates. Following is a discussion of the methodology employed to estimate births for the census years 1851-52 to 1911, and to correct for undercounts in the vital registration data in the years 1921, 1931 and 1941.

The number of births was estimated by the method of childhood survival rates, as used by Jacques Henripin (1972) for Canada and selected provinces. With this method, plausible survivorship rates are applied to the population of males and females, separately, aged 0-4 and 5-9 in the census ten years following the census year under consideration. In theory, the number of male and female children aged 0-4 and 5-9 in the second census year is simply divided by the appropriate survival rate in order to obtain an estimate of the number of births of each sex

occurring in the quinquennial periods between census years. Then the estimates for each sex are added together to obtain the total number of births.

It should be pointed out that the estimate of births attained by this method refers to the two five year periods between census years, or, if the estimate is divided by ten in order to obtain an annual estimate,[6] it is a better indicator of the number of births occurring in the middle year between censuses than in the census year itself. This problem was partially avoided by applying survival rates to the population aged 0-4 in the census year and to the population aged 5-9 in the following census year. In this way, the estimate referred to births occurring during the two five year periods centering on the census year itself. When this figure was divided by ten, the resulting estimate indicated the number of births occurring in the census year.

The method of childhood survival rates yields reasonably accurate estimates only when certain conditions are met. First, the survival rates that are applied must correspond to actual mortality conditions. However, actual survivorship in nineteenth and early twentieth Century Canada is unknown. Thus, it was necessary to borrow known trends of survivorship in similar populations. The survival rates used were derived from English life tables for the Censuses of 1851 to 1901 and Glover's American life tables

for the Census of 1911, as presented by Henripin (1972:360).

Second, accurate estimates are dependent upon a full census count of children aged 0-4 and 5-9. However, it is young ages that are most prone to underrepresentation. As pointed out by Henripin (1972:360), when the populations aged 0-4 and 5-9 are divided by survival rates, it occurs systematically that the number of births corresponding to the age group 0-4 is noticeably lower than that attributed to the age group 5-9. This phenomenon indicates that children 0-4 are undercounted relative to children aged 5-9. Undercounts are a function of underenumeration and of age misstatement. That is, some of the children aged 0-4 were missed by the census and others were classified incorrectly in terms of age.

Third, the method of childhood survival rates assumes zero net migration between census years. Losses to the population under age 10 are due to deaths alone while additions are the result of births alone. If this assumption is violated, this method overestimates births when net migration of children under 10 is positive, and underestimates births when net migration of children under 10 is negative. Unfortunately, there is no way to assess the migration experiences of the child population (Keyfitz, 1950:50). Although the net migration of persons aged over 10 years and over was negative for the years from 1861 to 1901, there is no basis for assuming that a similar case

existed in regard to children. It is possible that persons who migrated to Canada with children were more likely to settle within Canada, rather than moving on to the United States, than person immigrating alone. Similarly, it is possible that Canadian-born persons emigrating from Canada were more likely to be unattached individuals than persons with children. In either event, the net migration of children would differ from that of the adult population, and in a direction favouring positive net migration. If such was the case, although it is impossible to assess, the technique of survival rates yields birth estimates that are too high.

As a result of certain violation of the assumption of complete census representation of the childhood population and probable violation of the assumption of zero net migration of children under age 10, it was necessary to make corrections to the estimates based on the childhood survival rate method. The method of correction involved the computation of a set of birth rates, for each sex, that corresponded to the proportion of the male and female population under age 10 as reported in the census volumes (United Nations, 1967:29). This technique involved the use of model stable populations in conjunction with assumed levels of mortality. The mortality levels utilized were those derived by Coale and Demeny (1966) that most closely approximated the mortality schedules presented by Keyfitz

(1950:49) and Henripin (1972:360).[7] The assumed levels are as follows:

Census Year	Model Life Table	Life Expectancy at Birth	
		Male	Female
1851-52	West 8	34.9	37.5
1861	West 9	37.3	40.0
1871-1881	West 10	39.7	42.5
1891-1901	West 11	42.1	45.0
1911	West 13	47.1	50.0

The use of model stable populations may appear to be unwarranted in a situation where the characteristics of stability, i.e., unchanging fertility and mortality, are not met. However, it has been found that valid estimates of births can be obtained in populations that are not stable, as long as the estimates are based on ages under 15 (Shryock and Siegel, 1973:827; United Nations, 1967:29). As this second condition was met, the application of this technique was justified.

With the use of model stable populations and the assumed mortality levels, estimated crude birth rates (births per 1000 population) for males and females were obtained. From these crude birth rates, it was possible to estimate the proportion and, hence, the total number, of males and females aged 0-4 expected if no undercounts of children 0-4 occurred and if net migration in this age group was neglible. Any difference between the expected number and the actual or reported number was attributed to the combined effects of census underrepresentation and non-zero

net migration on the reported figures. The actual number of males and females aged 0-4 was replaced by the expected number for the estimation of births by the childhood survival rate method, as this technique assumes full representation and neglible net migration. The reported male and female population aged 0-4, the expected population, and the percent difference are presented in Table I.

It will be noted that the percent differences between the expected population and the reported population are not large, less than 8 percent in all cases. A possible explanation is that the effects of underrepresentation and non-zero net migration work in opposite directions, serving to cancel out one another. That is, census under-representation creates an undercount whereas non-neglible migration works to raise the actual count over the expected level. The speculation made earlier, concerning the possibility of positive net migration of children, fits in with this explanation.

By replacing the reported population aged 0-4 with the expected population aged 0-4, a new estimate of births was obtained. It has been argued that the population aged 5-9, as reported in these early censuses, is in need of correction also (Henripin, 1972:360-1). However, a decision not to make corrections for the census count of children aged 5-9 was made, based on the following considerations.

Table I

Reported and Expected Male and Female Population, aged 0-4, and Percent Difference Canada,[1] 1851-1911

Year	Reported Population Male	Reported Population Female	Expected Population Male	Expected Population Female	Percent Difference[5] Male	Percent Difference[5] Female
1851[2]	172,205	166,122	170,352	166,327	+1.1	-0.1
1861[3]	245,938	236,322	239,337	232,059	+2.8	+1.8
1871[4]	258,865	248,907	279,408	268,658	-7.5	-7.9
1881	304,050	294,535	318,242	309,045	-4.7	-4.9
1891	310,089	301,503	322,322	313,680	-3.9	-4.0
1901	327,842	321,056	337,359	328,761	-2.9	-2.4
1911	451,371	440,565	444,116	441,020	+1.6	-0.1

[1]Refers to present area of Canada, excluding Newfoundland, unless otherwise stated.

[2]Includes Upper Canada (Ontario) and Lower Canada (Quebec).

[3]Includes Upper Canada, Lower Canada and Nova Scotia.

[4]Includes Ontario, Quebec, Nova Scotia and New Brunswick.

[5]"-" indicates that the reported population is smaller than the expected population; "+" indicates that the reported population is larger than the expected population.

Sources: The reported populations aged 0-4 were taken from the following census statistics. Censuses of Canada: 1851-52 (v. 1, appendices 5 and 6, table 4); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 7); 1921 (v. 2, table 9).

There is a general tendency for the census counts of children to be affected more by age misstatements than by underenumeration (Grabill et al., 1958:406). In other words, it is more likely that a child is misclassified by age, usually in terms of an approaching birthday, especially one ending in a digit "0" or "5", than it is that a child is

missed by the census altogether. For example, some four year olds will be classified incorrectly as five year olds and some nine year olds will be misreported as ten year olds.

If data on single years of age are available, it is possible to test for the occurrence of this phenomenon, through the calculation of age ratios. When the number of persons reported at a given age is divided by the arithmetic mean of the numbers reported in the two adjacent ages, the expectation is that a ratio of 1 will be obtained, assuming linearity in the age distribution. A ratio larger than 1 indicates that there is an overcount or "heaping" at that age, while an age ratio smaller than 1 indicates a possible undercount.

As the Census of 1881 presented data on single years of age, age ratios for ages 4, 5, 9 and 10 were calculated. Evidence of "heaping" was found at ages 5 and 10; the age ratios were 1.01 and 1.07 respectively. Ratios lower than 1, indicative of underreporting, were found at ages 4 (.99) and 9 (.95).

Therefore, errors due to misreporting in the census counts for the age group 5-9, as indicated by the 1881 data, tend to cancel out one another. The loss of nine year olds counted as ten year olds is partially compensated for by the addition of four year olds counted as five year olds. Also, any age misstatements at the non-boundary ages (6, 7 and 8)

are inconsequential in terms of the total count of children aged 5-9. As a result of the patterning of age misstatement, the net effect of census error due to age misreporting, in terms of the total count at ages 5-9, is not great. Therefore, the census counts for this age group were not adjusted for the purposes of birth estimation by the survival rate method.[8]

For the census years 1851-52 to 1911, birth estimates based on the survival method, with adjustments made on the census counts at ages 0-4, were calculated for Canada. These estimates, compared with the census counts of births, are presented in Table II.

It was possible to make estimates for births in 1921, 1931 and 1941 by a simpler procedure. As noted previously, since 1921 annual birth data have been collected by a national vital registration system, which demanded a minimum of 90 percent completeness by provinces as a condition for inclusion in the system. It has been estimated that births were 91 percent complete in 1921, 94 percent complete in 1931, and 97 percent complete in 1941 (Ryder, 1954:80). Birth estimates in these years,[9] corrected for underregistration in light of the above estimates of completeness, are presented in Table II. Since 1946, with the advent of the family allowance programme, birth registration has been sufficiently complete to require no corrections.

Table II

Reported and Estimated Births: Canada,[1] 1851-1941

Year	Reported Births	Estimated Births	Completeness of Reported Births %
1851[2]	69,400	86,309	80.4
1861[3]	103,574	118,315	87.5
1871[4]	117,446	136,615	86.0
1881	138,347	152,776	90.6
1891	-	156,817	-
1901	149,448	176,807	84.5
1911	-	224,329	-
1921[5]	168,979	185,691	91.0
1921[6]	-	274,439	-
1931	240,654	256,015	94.0
1941	255,705	263,613	97.0

[1]Refers to present area of Canada, excluding Newfoundland, unless otherwise stated.

[2]Includes Upper Canada (Ontario) and Lower Canada (Quebec).

[3]Includes Upper Canada, Lower Canada and Nova Scotia.

[4]Includes Ontario, Quebec, Nova Scotia and New Brunswick.

[5]Excludes Quebec.

[6]Includes Quebec.

Sources: The numbers of reported births were taken from the following statistics. Censuses of Canada: 1851 (v. 1, appendices 5 and 6, table 4); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 7); 1881 (v. 2, table 7); 1901 (v. 4, table 9). Vital Statistics: 1921 (table 4); 1931 (table 3 and appendix 2); 1941 (table 11 and appendix 2, table A).

For the estimates made on the census counts of births, i.e., for the years 1851-52 to 1911, a crude validity check was made, through the computation of sex ratios at birth. In a western population, it is expected that the sex ratio at birth will be approximately 105 male births for every 100 female births. As male and female births were estimated independently, it was possible to compare the estimated sex ratio with the expected sex ratio. Values close to 105 will provide some confidence that the estimates are reasonable. The calculated sex ratios, presented in Table III, are close to the expected value of 105. In fact, in five of the seven census years, the value is exactly as expected.

A second way to assess the acceptability of the birth estimates is to compare them with other estimates and attempt to account for differences. Three sets of Canadian historical birth estimates, in the form of crude birth rates, are in existence: those of Keyfitz (1950), Henripin (1972), and McInnis (1974). These crude birth rate series, along with the one calculated here, are presented in Table IV.

It will be noted that the Henripin estimates are consistently the highest, the Keyfitz estimates are consistently the lowest, and the McInnis and research estimates are in the middle range, with little disagreement. The largest differential between these latter two series

Table III

Sex Ratios at Birth: Canada,[1] 1851-1911

Year	Male Births per 100 Female Births
1851[2]	105
1861[3]	105
1871[4]	105
1881	105
1891	105
1901	104
1911	103

[1]Refers to present area of Canada, excluding Newfoundland, unless otherwise stated.

[2]Includes Upper Canada (Ontario) and Lower Canada (Quebec).

[3]Includes Upper Canada, Lower Canada, and Nova Scotia.

[4]Includes Ontario, Quebec, Nova Scotia and New Brunswick.

Table IV

Alternative Canadian Crude Birth Rate Series: 1851-1911

	Births per 1000 population			
Year	Henripin Estimate	Keyfitz Estimate	McInnis Estimate[1]	Research Estimate
1851	46.2	43.1	-	46.8
1861	44.9	39.7	45.0	41.7
1871	45.0	37.1	39.0	39.2
1881	39.3	34.1	35.0	35.3
1891	35.7	31.8	32.5	32.4
1901	36.0	28.8	30.5	32.9
1911	34.4	26.8	31.0	31.1

[1]Estimated from Figure 3 in McInnis (1974).

Sources: Henripin (1972:366); Keyfitz (1950:55); McInnis (1974:16).

occurs with the 1861 estimate, when the percent difference approaches 8 percent. In terms of trend, the research estimates agree with both the Keyfitz and McInnis estimates in indicating a steady downward trend. The Henripin series alone does not exhibit a downward trend until after 1871.

The Keyfitz, Henripin, and research estimates are based on the childhood survival rate method and assume essentially similar mortality levels. The major factor accounting for the differences among these estimates concerns the way in which census underrepresentation of children is handled. Henripin (1972) made corrections for underrepresentation within the age groups 0-4 and 5-9; the technique employed here corrected for counting error within the age group 0-4 only; Keyfitz (1950) made no correction for census undercount, although his calculations, based on data of children aged under 10, rather than 0-4 and 5-9, involved an indirect correction for age misstatement.

It has been argued that Henripin overcorrects for underenumeration, especially for the age group 5-9, and thus produces birth estimates that are too high (McInnis, 1974: 14). His correction factors are generally large and exhibit a wide range, indicating underenumeration as high as 14 percent (in 1911-1921) and slight overenumeration (in 1851-1861) (Henripin, 1972:363). It seems doubtful that children aged 5-9 were underenumerated in excess of 10 percent. On the one hand, as was stated previously, the

more common error involves age misstatements which have the tendency to cancel out one another. On the other hand, Keyfitz's migration estimates for the age group 5-9 do not reveal noticeable distortions, suggestive of significant underenumeration, whereas his migration estimates for the age group 0-4 do (McInnis, 1974:14).

Both the magnitude and the trend of the Henripin estimates appear to be related to the size and variability in the correction factors for ages 5-9. The adjustments overcorrect for underenumeration and, thus, result in estimates that are likely too high in most years. Also, as stated above, his series exhibits a unique trend, with the crude birth rate declining only after 1871. An explanation for this trend lies in the size and direction of the correction factors in these early years. His calculations imply that children aged 5-9 were underenumerated by more than 12 percent in 1871 but slightly overenumerated in 1851 and 1861. As a result, births are perhaps underestimated in 1851 and 1861 and overestimated in 1871. Such a pattern of error in estimation would account for the trend apparent in the Henripin series.

McInnis' estimates, which lie between those of Keyfitz and Henripin and are close to the research estimates, represent the result of the average of several techniques, including the survival rate method. The major change introduced by McInnis was the use of cohort reverse

survival method, a technique which involves the repeated surviving backwards of a birth cohort, as it is observed over censuses, in order to obtain a set of birth estimates which are then averaged. McInnis combined the native-born Canadian population resident in Canada and the Canadian-born population resident in the United States in order to obtain migration-free estimates of surviving cohort population size. The advantages of this technique are that the confounding effects of migration are eliminated and that census enumeration error is averaged out. However, this method, like the survival rate method, is dependent upon assumed mortality levels. Also, an important limiting factor is that lack of data does not allow the use of this procedure at the provincial level.

It is difficult to account for the differences among the McInnis and other series, mainly because of lack of information concerning the other procedures that McInnis employed. However, because the cohort reverse survival method deals more adequately with migration, essentially by "creating" a closed population, than does the reverse survival method, and because the McInnis series is based on the results of a multi-method procedure, it seems likely that the McInnis Canadian series is the superior one. The fact that the present research, which could not employ cohort methods because of data limitations at the provincial level, produced estimates that coincide closely with those

of McInnis adds a measure of believability to the present results.

Apart from estimating births for Canada as a whole, a set of acceptable provincial estimates was desired. The survival rate method, with the outlined adjustments for underrepresentation at ages 0-4, was used. However, when the population of a province grew substantially, defined as more than 50 percent, between census years, this technique was not utilized. It was assumed that growth of such dimension, necessarily due to a significant amount of in-migration, was likely to be felt in the childhood population as well. The inapplicability of the survival rate technique, due to significant violation of the assumption of zero net migration, occurred in the case of the western provinces in the period spanning from 1881 to 1911. All western provinces covered in these census years experienced intercensal growth exceeding 50 percent. In some instances, the growth well exceeded 100 percent, as was the case in Manitoba in 1881-1891 (131 percent), British Columbia in 1901-1911 (120 percent), Saskatchewan in 1901-1911 (440 percent) and Alberta in 1901-1911 (413 percent).[10]

In the light of such substantial growth, it was decided that birth estimates for each western province were not feasible. Rather, an estimate, for each census year, for the total west[11] was obtained in a residual fashion.

The number of births estimated for the eastern provinces was subtracted from the number of births estimated for Canada as a whole in each census year from 1881 to 1911. The provincial birth rate estimates are presented in Table V.

Table V

Estimated Provincial Crude Birth Rates
1851-1911

	Births per 1000 Population					
Year	P.E.I.	Nova Scotia	New Brunswick	Quebec	Ontario	"West"
1851	-	-	-	46.0	47.7	-
1861	-	39.1	-	40.6	43.1	-
1871	-	37.3	38.4	39.9	39.3	-
1881	34.0	32.6	33.9	39.0	33.5	37.5
1891	30.9	30.3	32.2	36.5	28.8	40.6
1901	27.0	29.5	30.9	36.9	27.0	47.2
1911	25.1	28.3	30.5	34.8	26.2	35.3

A partial test of the validity of the provincial estimates was made by comparing the enumerated births with the estimated births, in an attempt to measure the extent of birth underenumeration. If the provincial estimates are fairly accurate, two phenomena are expected to emerge. One, the degree of underenumeration in Quebec will be low, as that province possessed an excellent registration system for Catholic births since the beginning of French colonization (Henripin, 1972:351). Two, the western provinces (combined) will experience a high degree of underenumeration due to

their population composition and inexperience with census-taking. As shown in Table VI these expected differentials did, in fact, emerge.

Table VI

Estimates of Provincial Birth Underenumeration: 1851, 1861, 1871, 1881, and 1901

	Percent Underenumeration					
Year	P.E.I.	Nova Scotia	New Brunswick	Quebec	Ontario	"West"
1851	-	-	-	10.2	28.0	-
1861	-	25.7	-	9.7	11.7	-
1871	-	19.5	16.3	2.7	20.8	-
1881	11.8	13.6	10.1	0.0	12.6	45.0
1901	21.9	21.2	15.9	1.6	11.4	47.7

Sources: The numbers of reported births were taken from the following census statistics. Censuses of Canada: 1851 (v. 1, appendices 5 and 6, table 4); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 7); 1901 (v. 4, table 9)

The second major problem involved with the use of Canadian census data concerns the reaggregation of total population by age and population by age and marital status into five year age groups. This problem is particularly important in the case of total women and married women in the childbearing ages of 15-49, as subsequent analyses require that all women and married women of childbearing age be aggregated into five-year age groups. Also, estimates of the male and female single population into

five-year age categories for ages between 15 and 54 were desired.

The early Canadian censuses did not present information on age-sex distribution and marital status by age in the desired form. In the censuses prior to 1881, the age distribution of the Canadian male and female population was presented in ten-year age categories after age 20. The distribution of the population by marital status was aggregated in ten-year age groups after age 20 in the Censuses of 1851-52 and 1861 and was presented for age groups 15-20, 21-30, 31-40 and 41-60 in 1871 and 1881. In 1891, the data on marital status were presented for age groups 15-24, 25-34, 35-44 and 45-54. The 1951 Census provided data on marital status for ten-year age groups after age 25 for the provinces, although information for Canada as a whole was given for five-year age groups. Also, the 1901 Census provided no information concerning marital status by age.

The interpolation of grouped data was performed by the cumulation-differencing method using data on absolute numbers (Shryock and Siegel, 1973:698). This method has a sounder theoretical basis than the more common "midpoint" technique as the assumption that a group average corresponds exactly to the group midpoint is not made. This method has the pragmatic advantage of applicability to grouped data of any interval size and to grouped data

corresponding to any curve. Therefore, this technique was applied for interpolations at all census years when data were not grouped into five-year age categories, regardless of length of age interval provided in the census.

The first step of this procedure involved cumulating, from the youngest age group, the population in each age group[12] as given in the census. Through cumulation, the original data were transformed from group data into data referring to specific ages. Then, interpolation was performed using Aitken's iterative procedure which is a system of successive linear interpolations equivalent to interpolation by a polynomial of any desired degree (Shryock and Siegel, 1973:684).

This technique is illustrated using the data for women in Quebec (Lower Canada) in 1851-52. The numbers of women as reported in the census were as follows: 53,180 aged 15-19; 74,536 aged 20-29; 45,032 aged 30-39; and 31,829 aged 40-49. Suppose one is interested in knowing the number of women aged 20-24. It is necessary to find the cumulative total to age 25, the upper limit of the age group, and subtract from it the cumulative total to age 20.

The basic format for interpolation among four given points for the value f(x) is as follows:

Ordinates	Computational Stages (1)	(2)	(3)	Proportionate Parts
f(a)	-	-	-	a-x
f(b)	f(x;a,b)	-		b-x
f(c)	f(x;a,c)	f(x;a,b,c)		c-x
f(d)	f(x;a,d)	f(x;a,b,d)	f(x;a,b,c,d)	d-x

where, in this example,

a = 20, b = 30, c = 40, d = 50, x = 25

The computational formuli are presented in Shryock and Siegel (1973:685). In general terms, the procedure involves computing diagonal cross-products, differencing them and dividing by the difference between the proportionate parts. The proportionate parts are differences between the given abscissa and the one for which the interpolation is wanted.

The calculations of the 1851 Quebec data for f(x) = 25 are as follows:

Ordinates	Cumulated Population	Computations (1)	(2)	(3)	Proportionate Parts
20	53,180	-	-	-	-5
30	127,716	90,448	-	-	+5
40	172,748	83,072	94,136	-	+15
50	204,577	78,413	93,457	95,155	+25

The interpolated figure 95,155 refers to the cumulative total number of women up to age 25. The number of women aged 20-24 is this figure minus the number cumulated to age 20 (53,180) which equals 41,975. Also, subtracting the cumulative total to age 25 (95,155) from the given

cumulative total to age 30 (127,716) produces the number of women aged 25-29, 32,561. This procedure is repeated for ages 35 and 45 in order to obtain an entire series of women in five year age groups encompassing the childbearing ages. The results of this interpolation method are presented in Appendix A, for all cases in which the presented figures required reaggregation and in which the requisite information was given.

When dealing with census data covering a long time span, problems of data accuracy and data comparability emerge, particularly with the information provided in the nineteenth Century censuses. This chapter has attempted to describe the problems, and to delineate the adjustments that were made, in the data related to births, age-sex distribution and marital status distribution.

Footnotes

[1]Beginning in 1956, quinquennial censuses have been taken.

[2]In 1851-52, censuses were taken by the provinces of Nova Scotia and New Brunswick. However, data provided were very scant and aggregated.

[3]Yukon and Northwest Territories are not dealt with specifically here. However, data for these areas are included in the Canadian averages, as are data for unenumerated provinces, except Newfoundland, from 1881 onwards.

[4]Quebec did not enter the registration system until 1926 and Newfoundland entered in 1949, upon joining Confederation. However, even today, the information available for Newfoundland is limited.

[5]The date of the census varied: in 1871-1901, the census was taken in April; the 1851-52 Census was taken in January, 1852; the Census of 1911 occurred in June. The date of the 1861 Census could not be obtained.

[6]The procedure of dividing the estimates of births for two five-year periods by ten in order to obtain an annual estimate is not wholly justifiable as it assumes that births are distributed in linear fashion throughout the ten-year period. However, for the purposes of subsequent analyses, it was necessary to estimate annual births for each census year.

[7]Therefore, in the handling of mortality, the method used here does not differ from the procedures used by Keyfitz (1950) or Henripin (1972).

[8]As is discussed later, Henripin (1972) made corrections for underenumeration at ages 5-9.

[9]Vital registration information for 1921 did not include Quebec. The estimate provided by Henripin (1972:372) of births in Quebec in 1921 was borrowed.

[10]These figures were calculated from statistics given in the 1921 Census of Canada (v. 2, table 9).

[11]Total west included the four western provinces and the northern territories.

[12]Persons of unstated age were distributed proportionately into the given age categories.

CHAPTER III

FOUR STAGES OF FERTILITY IN CANADA

In order to attain a very broad picture of the level and trends of Canadian fertility throughout the period from 1851 to 1971, two general measures of fertility were constructed: the crude birth rate, the total number of births occurring per 1000 total population, and the general fertility rate, the total number of births occurring per 1000 total women in the childbearing ages of 15-49. These rates are presented in Table VII and pictured in Graph 1. It can be seen that the overall trend of fertility for the period from 1851 to 1971 was one of marked decline. The course of Canadian fertility reveals a transition from initially high rates to low rates in 1971, with a decline in the magnitude of approximately 65 percent from the 1851 level of the crude birth rate and the general fertility rate. Although the decline was substantial, it was not continuous throughout the entire period. It is this unevenness in the trend of decline that suggests the utility of a stage framework in describing the Canadian fertility transition.

Four stages of fertility in Canada can be identified, embracing the years 1851-1891, 1891-1921,

Table VII

Crude Birth Rates and General Fertility Rates: Level and Percent Change. Canada,[1] 1851-1971

Year	Crude Birth Rate	Percent Change	General Fertility Rate	Percent Change
1851[2]	46.8	-	206.5	-
1861[3]	41.7	-10.9	179.2	-13.2
1871[4]	39.2	-6.0	164.7	-8.1
1881	35.3	-9.9	144.3	-12.4
1891	32.4	-8.2	131.4	-8.9
1901	32.9	+1.5	133.4	+1.5
1911	31.1	-5.5	129.9	-2.6
1921	31.2	+0.3	128.1	-1.4
1931	24.7	-20.8	99.5	-22.3
1941	22.9	-7.3	89.1	-10.5
1951[5]	27.2	+18.8	110.1	+23.6
1961[5]	26.0	-4.4	112.7	+2.4
1971[5]	16.8	-35.4	68.6	-39.1
1851-1891		-30.8		-36.4
1891-1921		-3.7		-2.5
1921-1961		-16.7		-12.0
1961-1971		-35.4		-38.7
1851-1971		-64.1		-66.8

[1]Refers to present area of Canada, excluding Newfoundland, unless otherwise stated.

[2]Refers to Upper Canada (Ontario) and Lower Canada (Quebec).

[3]Refers to Upper Canada, Lower Canada, and Nova Scotia.

[4]Refers to Ontario, Quebec, Nova Scotia and New Brunswick.

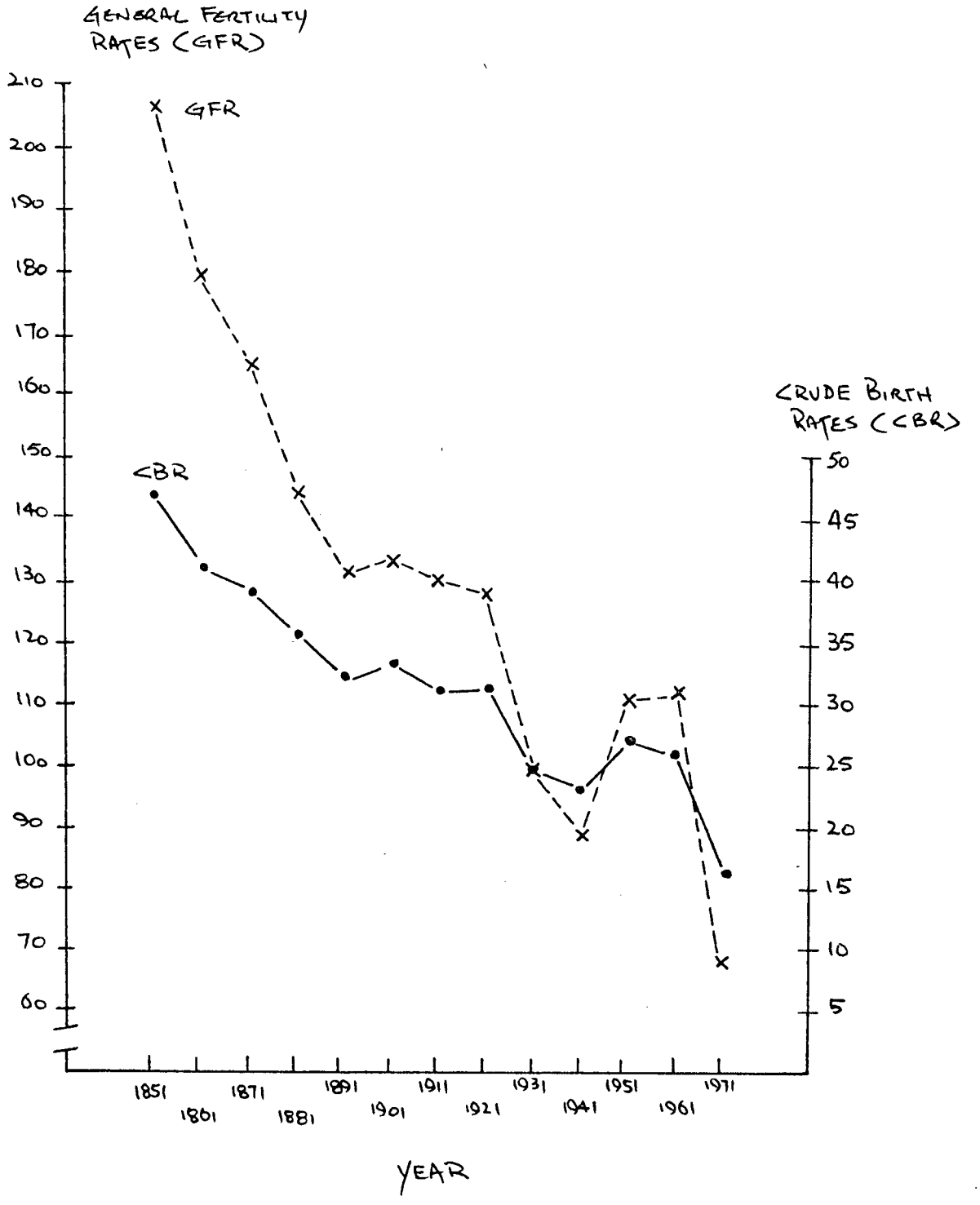
[5]Includes Newfoundland.

Sources: Data on births were taken from the estimations performed in Chapter II and Vital Statistics, 1971 (Births, table 5). Data on total population and females aged 15-49 were taken from the following census statistics. Censuses of Canada: 1851 (v. 1, appendices 5 and 6, table 4); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 7); 1921 (v. 2, table 9), 1971 (cat. 92-715, table 7).

GRAPH 1

CRUDE BIRTH RATES AND GENERAL FERTILITY RATES.

CANADA, 1851-1971



SOURCE: TABLE VII

1921-1961, and 1961-1971. Each of these stages is characterized by a particular average level of fertility and a particular trend of fertility change. The selection of the stages was based on the observed data and the trends embodied therein. Three principles were used in the selection: minimization of the number of stages, homogeniety in level and/or trend within a stage, and de-emphasis of short-term fluctuation. A certain amount of subjective judgment was involved, particularly in the delineation of the third stage. One could sub-divide the third stage into two, 1921-1941 and 1941-1961. However, the decision was made not to sub-divide, on the basis of the first and third principles.

Underlying the examination of the levels and trends of Canadian fertility, in the context of a stage framework, are the basic propositions of the theory of demographic transition[1] as it relates to fertility change in western populations.[2] Demographic transition theory offers a descriptive and explanatory account of fertility change.

At the broadest level, the explanation views fertility levels and trends as the product of social and economic factors. Pre-modern fertility levels are high, as are mortality levels, although research documenting European transition indicates that fertility may be controlled to some extent (Demeny, 1968; Leasure, 1963; Livi-Bacci, 1971). High fertility results from a complex of

factors associated with pre-industrial social structure. Children are economically advantageous as they contribute to agricultural production at young ages and function as a source of security for aged parents. On the other hand, the costs of childrearing are small, particularly the costs of education. The economic utility of children is buttressed by a system of social beliefs that reinforces the value of children. Modernization, or socioeconomic development, operates to lower fertility by transforming the social structural elements conducive to the production of large numbers of children. Decreasing mortality, particularly infant mortality, serves to reduce fertility by making "insurance" births less necessary. Urbanization, one facet of modernization, decreases the productive utility of children. The cost of childrearing rises in an urban environment, as levels of educational attainment increase. Economic development alters the structure of production by de-emphasizing the family as a production unit, by fostering an impersonal system of job allocation, and by creating economic roles for women outside the home. As a result, opportunities for economic mobility are enhanced and can be best taken advantage of with a small family (Coale and Hoover, 1958:11). In other words, economic development offers goals that compete with large numbers of children. Lastly, economic modernization creates a transformed value structure, with an emphasis on

individualism, achievement, and secularism. The transformation in values is facilitated by the increased levels of educational attainment that an industrial society requires.

Thus, the motivation to control fertility is viewed as stemming from the social and economic concomitants of modernization.[3] However, the timing and pace of sustained fertility decline need not correspond to any specific level of social and economic development. The path of fertility transition is a complex one; societies do not respond uniformly to given stimuli. The particular interrelationships among the elements of the pre-industrial social structure cannot be ignored. As Coale (1973) has stated, pre-modern societies vary in the extent to which they are amenable to fertility reduction. It is suggested that this variation is related to cultural factors. Differences in pre-modern receptiveness lead to variations in the timing and speed of fertility reduction once modernization commences. Also, as Davis (1963) has pointed out, demographic response to modernization may take many forms, fertility reduction being only one.

First Stage

Looking at the first stage of fertility, from 1851 to 1891, it can be observed that the level of fertility at the beginning of this period was high: the crude birth rate approached 47 births per 1000 total population and the

general fertility rate exceeded 200 births per 1000 women aged 15-49. Despite these high rates, there is no guarantee that the fertility level in 1851 was the highest occurring within the Canadian experience. It is possible that Canadian fertility decline commenced prior to the mid-nineteenth Century. Henripin's (1972:366) crude birth rate estimates for present-day Ontario and Quebec suggest that reductions did occur before 1851. However, as discussed in the previous chapter, Henripin's estimates tend to be rather high. Therefore, a degree of uncertainty exists in terms of the identification of the upper limit of Canadian fertility. As a result, it is not possible to pinpoint the decade of initial, sustained decline in Canadian fertility. As Table VII indicates, the percent decline in rate in the decade 1851-1961 was rather substantial, in the range of 11 to 13 percent. Reductions may have occurred earlier and the decline registered between 1851 and 1861 merely reflect a continuation of a previously-begun decline. In terms of initial fertility level and timing of decline, the safest statement that may be made is the initial, pre-decline level in Canada was at least as high as that registered in 1851 and that decline was well on its way by 1861.

One defining characteristic of the first fertility stage is the high level of fertility experienced. A second major characteristic is in terms of trend. In the period from 1851 to 1891, Canadian fertility underwent a marked

decline, with rates falling in excess of 30 percent. The decline was continuous throughout the period, with no one decade accounting for a significantly larger portion of the decline than any other decade. This trend of continual decline ended abruptly in 1891, signalling the termination of the first fertility period.

In order to better understand why Canadian fertility in the latter half of the nineteenth Century was initially high and underwent substantial reduction, it is necessary to look at social and economic conditions during the period.

In the beginning of this period, Canada, then called British North America, was a colony of Britain, with an economy based on primary product extraction and exportation. A number of changes in economic organization occurred during this period, changes that can best be viewed in the context of Canada's role as exporter of raw materials and the economic dependency thus engendered. In the 1850's, Britain discontinued the practice of colonial preference in trade arrangements and, thus, forced British North America to alter its system of economic organization in the light of international competition. The key elements of economic re-organization were the railway and the tariff (Easterbrook and Aitken, 1967:355). The construction of the trunk-line railways was particularly significant as it marked the emergence of industrial technology into Canada. Thus, the beginning of industrialization in Canada occurred during

this first stage of fertility. Increased tariffs on manufactured goods, instituted so as to finance railway construction, met with unfavourable reaction from the Americans who cancelled the Reciprocity Treaty of 1854.

This changing economic climate had political repercussions. External forces, namely the actions of the British and the Americans, had created the need for change in a society that had based its economy on the exportation of primary products, leaving itself vulnerable to outside market conditions and the policies of other countries. Specific problems thus incurred, such as the financing of the railways and the market difficulties with the United States, and the fear of American territorial expansion, were among the factors that led to the Confederation of Canada in 1867.

Thus, the period from the mid-nineteenth Century to the time of Confederation was marked by significant change in economic and political conditions in Canada. The emergence of industry and the development of an independent Canada were perhaps the most significant developments. It is noteworthy that these changes were generated by forces external to Canada, or were Canadian reactions to outside influences. The fact that the nexus of change was not internally propagated suggests nineteenth Century Canada was not an innovative society: she reacted to change rather than initiated it.

The period immediately after Confederation witnessed the development of many factors upon which an industrial society would be based. The completion of the inter-continental railway in 1885 provided a transportation and communication link from coast to coast. The "National Policy" was instituted in an effort to facilitate industrialization. The core elements of the "National Policy" were: continental expansion, transportation improvements to aid expansion, emphasis on a few staple exports designed for European markets, development of secondary industry and finance, and increased protective tariffs (Easterbrook and Aitken, 1967:388). Other policies were designed to expand the domestic market and to encourage investment of foreign capital (Firestone, 1969: 105).

It is important to keep in mind, however, the characteristics of the society upon which these new programmes were launched. At the time of the first census after Confederation, in 1871, the population was largely rural, with only approximately 18 percent of the population living in urban areas, as shown in Table VIII. Statistics on occupational distribution in 1871 indicate that 51 percent of the economically active population was engaged in farming, lumbering and fishing, 13 percent in manufacturing and handicrafts, 18 percent in construction and unskilled labour, and 18 percent in service occupations (Report of

Table VIII

Percent of Population Urban.[1] Canada,[2] 1851-1891

1851	13.1
1861	15.8
1871	18.3
1881	23.3
1891	29.8

[1]Urban population defined as the population residing in incorporated cities, towns, and villages of 1,000 or more.

[2]Excludes Yukon and Northwest Territories.

Source: Stone (1967:29).

the Royal Commission on Dominion-Provincial Relations, 1940:22). Therefore, the economy was basically agrarian. The manufacturing sector was small and it has been pointed out that it had an "agricultural" nature, with concentration on blacksmithing, handicrafts, and agricultural implements (Clement, 1975:69). Persons in the service occupations were predominantly domestic servants, a feature characteristic of non-industrial societies. However, the not-neglible proportion involved in construction, a reflection of railway building, suggests the beginning of change in an agrarian-based economic structure.

Thus, Canadian society in the two initial decades of this first stage (and earlier) was characterized by a system of economic organization conducive to high fertility levels. Canada was primarily a rural society and, as such, provided

an environment in which the production of children in large numbers was both economically feasible and desirable. The manufacturing sector was so small and so closely associated with agricultural pursuits that its existence probably posed little threat to the agrarian social structure and the values and behaviour embodied therein. Yet, change was occurring, as discussed above, and that change was reflected in declining fertility. The decline in the crude birth rate in the twenty years between 1851 and 1871 was substantial, more than 7 points. However, it will be noted that decline commenced prior to the large-scale introduction of industry into Canada and while Canada was overwhelmingly a rural population. The finding of substantial fertility reduction prior to significant development of the industrial and urban sector in western societies is not a new one (Coale, 1969:18). This finding in the Canadian case reinforces the general conclusion that the commencement of fertility decline need not be dependent upon any specific level of economic or social development (van de Walle and Knodel, 1967), although sustained reduction may be dependent upon increasing development.

The non-industrial character of Canada at the time of Confederation resulted from a number of factors. Important was the initial *raison d'être* of the British North American colonies: providers of raw materials for European industrialization. As a result, commercial or merchant

interests had been dominant in Canada and competed with the early industrial interests, operating to hamper the development of industrialization, as merchant capital is oriented toward quick extraction rather than industrial processing (Clement, 1975:95). The geography of Canada also played a role as the development of industrial capital requires low transportation costs.

Despite these barriers, a certain degree of economic growth characterized the last quarter of the nineteenth Century, even in the face of a general depression that began in 1873, lasting 23 years. The depression can be attributed to unfavourable economic conditions overseas and declining prices for Canadian exports. Easterbrook and Aitken (1967:396) point out that the tempo of American development, which diverted capital and population away from Canada, played a role also. Nevertheless, Canada made some gains in economic development with, for example, Gross National Product (in constant dollars) increasing 76.1 percent per capita in the period from 1867 to 1896 (Firestone, 1969:106). Also, the percent of the population urban grew to nearly 30 percent in 1891, as shown in Table VIII. This growth in economic output and urbanization was accompanied by further declines in fertility. The crude birth rate fell another 7 points between 1871 and 1891.

Despite the gains registered in economic development, the expectations of the founders of Confederation had been

disappointed. Of particular concern was the issue of immigration. In the second half of the nineteenth Century (and later), Canada attempted to assure herself a large and steady volume of immigrants. The view of the day was that industrial development was dependent upon a large population and a growing domestic market (Macdonald, 1966: 30). Reflecting this view, the Canadian government instituted a number of policies aimed at encouraging immigration. Chief among these was extensive advertising in preferred countries, particularly Great Britain. An assisted passage system was also operative, structured to attract agricultural labourers and domestic servants. Despite such actions, the number of immigrants entering Canada was not encouraging. Even more alarming, from the Canadian point of view, was the fact of emigration. In the decades from 1861 to 1891, the number of out-migrants surpassed the number of immigrants, resulting in negative net migration (Keyfitz, 1950:51). As the Canadian authorities did not keep records of the out-migrants, it is not possible to ascertain who, in fact, was leaving Canada. It is certain though, that Canadian-born were among the out-migrants, as United States census figures indicate a fairly large number of Canadian-born residents (Kalbach and McVey, 1971:43).

Nineteenth Century census statistics on place of birth, as shown in Table IX, reflect Canada's growing lack

Table IX

Foreign-Born Population of Canada, 1851-1891

	Number Foreign-Born	Percent of Total Population	Percent British[5] of Total Foreign-Born
1851[1]	487,218	26.4	84.5
1861[2]	608,762	21.5	83.7
1871[3]	585,230	16.2	83.0
1881[4]	602,063	14.1	78.0
1891[4]	628,492	13.3	73.8

[1]Includes Upper Canada and Lower Canada.

[2]Includes Upper Canada, Lower Canada, and Nova Scotia.

[3]Includes Ontario, Quebec, Nova Scotia, and New Brunswick.

[4]Includes Ontario, Quebec, Nova Scotia, New Brunswick, Prince Edward Island, Manitoba and British Columbia.

[5]Includes English, Welsh, Scottish and Irish.

Sources: Censuses of Canada: 1851 (v. 2, table 3); 1861 (Abstract of Origins); 1871 (v. 1, table 4); 1881 (v. 4, table D); 1891 (v. 4, table D).

of attraction for immigrants. The percent foreign-born (born outside the boundaries of present-day Canada) was 26.4 percent in 1851, but only 13.3 percent in 1891. However, the provinces shared unequally in the declining percent foreign-born as seen in Table X. The provinces of Ontario, Quebec and the Maritimes experienced declining percentages foreign-born during this period whereas the provinces of British Columbia and Manitoba registered significant gains. Therefore, although in the latter years

Table X

Percent Foreign-Born, by Province, 1871-1891

	1871	1881	1891
P.E.I.		8.1	5.9
Nova Scotia	7.5	5.9	5.9
New Brunswick	13.1	9.6	6.9
Quebec	6.5	5.6	5.5
Ontario	27.2	22.5	19.2
Manitoba		21.3	29.2
B.C.		29.3	42.1

Sources: Censuses of Canada: 1851 (v. 2, table 3); 1861 (Abstract of Origins); 1871 (v. 1, table 4); 1881 (v. 4, table D); 1891 (v. 4, table D).

of the nineteenth Century, Canada, as a whole, was characterized by a decreasing percentage foreign-born, there was a western shift in the distribution of the foreign-born population.

The foreign-born population in the nineteenth Century was predominantly of British origin, although the percentage British declined somewhat from 1851 to 1891, as shown in Table IX. That the composition of the foreign-born population remained British in origin was in keeping with the immigration aims of English-speaking Canada. However, many of the immigrants were not of the type desired by Canada: persons of the agricultural classes. In part, this situation reflected the opposing aims of migration as perceived by the sender society, Great Britain, and the

receiver society, Canada. Canada sought to encourage agriculturists and to bar out "undesirables" (Magrath, 1910:71). Britain, on the other hand, viewed emigration as one means of ridding herself of burdensome elements (Kalbach, 1970:10). The result was that Canada, particularly in the years immediately following Confederation to the end of the nineteenth Century, received unemployed craftsmen and unskilled labourers from urban Britain (Macdonald, 1966:92). The poor, the unemployed, and the destitute came to Canada, aided by British charitable organizations in many cases.

Migration and urbanization were related forces in Canada during this period. It appears that many of the foreign-born resided in urban centres in Canada. The Mayor of Toronto, in a sworn statement to the Royal Commission on the Relations of Labor and Capital in Canada, 1889, said that one of the causes of poverty in that city was:

> the sending out to this country of people who are unsuited to make a living here - the sending out of great numbers of people who have got the poor-house taint, and who will never work or do any good anywhere. (quoted in Cross, 1974:198)

The issue of "poor-house taint" aside, it seems that Canada was receiving immigrants from urban backgrounds and that these people tended to remain in urban centres when in Canada. In contrast, out-migration of Canadian-born, particularly from Quebec, was in large part from rural areas (Henripin and Peron, 1972:225). Therefore, the

growing urban population in nineteenth Century Canada can be partially accounted for by the differential characteristics of the in-migrants and the out-migrants.

The declining fertility of the first stage must be viewed, at least in part, in the light of this migration-determined shift in population composition. Given rural-urban differentials in fertility performance, it can be suggested that an in-migration of persons of urban background coupled with an out-migration of persons from rural areas exerts a fertility-lowering effect, independent of any internally-generated changes conducive to lowered fertility. Also, it is likely that urban values were introduced into Canadian society along with the urban immigrants.

The growing urban population in Canada was not only a product of differential migration, but also of increasing industrialization, which exerts a more direct effect on reducing fertility. In 1870, there were 38,898 manufacturing establishments, employing 181,679 people, 13 percent of the labour force, or an average of 4.7 persons per establishment. The average capital investment of these establishments was $1,900 (Clement, 1975:69). Information provided in the 1891 Census reveals that, by that year, the number of industrial establishments had nearly doubled to 75,968, employing 370,256 persons, or 23 percent of the labour force. Average capital investment was $2,300. Manufacturing was beginning to lose its "rural" character.

Twenty-seven percent of the industrial employees worked in establishments in nine major cities.[4] In these establishments, the average number of persons employed was 12 per establishment.[5] The urban establishments, which had an average capital investment of $5,900, accounted for approximately 30 percent of total capital investment.

Coupled with this growth in industry was a decline in the percent of agricultural occupations. Nevertheless, the country remained highly agricultural in 1891, with 45.8 percent of all occupations designated as agricultural.

One facet of the changing occupational structure of Canada during this period concerns the increasing employment of women in the paid labour force. The Censuses of 1871 and 1881 did not publish statistics on the total labour force participation of women, except to indicate 39,499 female domestic servants in 1871 and 49,345 female domestic servants and 3,768 female school teachers in 1881. The 1881 figures account for 4 percent of the total adult female population over age 15, although it is certain that this figure is an underestimate. By 1891, the number of employed women was 195,990, 13 percent of total women aged over 15 and 12.2 percent of the total labour force. By and large, two occupational classifications encompassed the female working population in 1891, domestic service which employed 46.6 percent of all working women, and manufacturing which employed 31.9 percent.

As to the marital status of the female working population, it seems likely that most of the women were unmarried, particularly in the case of domestic servants. In terms of the women employed in manufacturing, the matter is less certain. The Royal Commission of 1882, found few married women working in the factories investigated, less than 3 percent of the female work force. On the other hand, an article written in the Toronto *Globe* in 1881 suggested that Canadian factories institute funds to allow women "to cease work for a sufficiently long time before and after the birth of their children to prevent injury to the constitution of mother or infant" (quoted in Cross, 1974:75). It seems likely that some married women did work, probably out of economic necessity.

Evidence from the Royal Commission on the Relations of Labor and Capital in Canada, 1889, suggests that economic conditions may readily have forced married women into the labour force. One boot and shoe maker made the following statement concerning the effects of mechanization:

> Q. Has the introduction of machinery in the boot and shoe trade resulted in a lowering of wages?
>
> A. Yes; and that is the reason that I came here, before this Commission to say that our wages have been lowered, and not only the wages but the work has decreased, inasmuch as today one machine most certainly takes the place, on an average, of five or six men. (quoted in Cross, 1974:92)

The same Commission heard the testimony of a Nova Scotia

miner whose employer deducted varying amounts for rent, coal, taxes, etc. so that each month his deductions equalled his earnings, leaving him with no cash, regardless of monthly fluctuations in the amount he earned (Cross, 1974: 85). The Inspector of Factories in Ontario reported receiving the following letter in 1892 from a 12 year old girl:

> Dear Sir:
> I take the privilege of asking your consent, if you will kindly allow me to go to work. I have no father, and mother has worked and supported us for six years. Her health is failing and she cannot stand such hard labor any more.... (quoted in Cross, 1974:99-100).

These examples point out that the characteristics of early industrial society, such as increased mechanization, unscrupulous employers, death and illness, and the absence of social insurance may have been factors operating to force married and widowed women and children into the labour force. These same factors may have been responsible for the declining fertility experienced in Canada during this period, particularly within the growing urban population. Adverse social and economic conditions, particularly for the working classes of the urban centers, may have exerted a strong motivation in favour of limiting fertility.

Another characteristic of the nineteenth Century labour force was the existence of child labourers. The conditions of child labour were a major concern of the Royal Commission in 1889, although the incidence of industrial

child labour was not high, with, for example, in 1891, 26,552 boys and girls below 16 years of age, or 7.2 percent of all industrial employees or approximately 4 percent of children aged 10-16, employed in industrial establishments. Nevertheless, the fact of child employment is important. It suggests that children continued to function in an economically productive role in the early stages of the transition to an industrial society. The fact that children were potential contributors to family earnings probably operated as a factor placing positive valuation on children, and, in that way, functioned to keep fertility rates as high as they were. Thus, child employment may have operated as a counterpressure against the other factors determinant of lowered fertility. A secondary effect of the incidence and conditions of child labour was that it intensified public concern with the value and role of education.

Census figures indicate that approximately one-half of children between the ages of 4 and 15 were enrolled in schools in 1851. By 1881, the figure increased to approximately 73 percent. However, enrollment figures are somewhat deceiving, as actual attendance tended to be irregular and spasmodic at mid-century. Between 1870 and 1900, the provinces took measures making schooling compulsory. Ontario led in this regard, enacting legislation which required parents, by threat of penalty, to have children between the ages of 7 and 12 attend school for

a minimum of four months per year (Phillips, 1957:187).

The role of education was viewed in two ways in nineteenth Century society. On the one hand, the economic functions of education were emphasized, with the argument that increased education was a prerequisite of an industrial society. For example, the Royal Commission of 1882 stated "a demand is gaining for intelligent and educated labor in our mills and factories" (Lawr and Gidney, 1973:66). On the other hand, the moral content and consequences of education proved to be a contentious issue. The separation of church and state and denominationalism vs. non-denominationalism were matters causing considerable conflict in Canada at this time.

It has been argued (Firestone, 1969:181) that the struggles over education, in its relationship with religion, served to retard the development of education in Canada. The issues of irregular attendance, non-attendance, etc., were pushed to the back. This argument has a certain validity as it was only late in the nineteenth Century, when industrial employment made child workers visible, the conditions of their labour suspect, and when the economic benefits of an educated labour force became recognized, that attempts were made to insure that children attend school regularly and for a longer time. As such, Canadian education lagged behind that of the United States (Firestone, 1969:181). Also, the conflict engendered concerning the

role of religion in education serves to highlight the important place that religion held in the minds of nineteenth Century Canadians. It is possible that the religiousity of Canadians, given the dictates of the Christian religion, may have been a factor keeping fertility high and counteracting pressures for decline. Similarly, the religious input in education may have hampered the development of secular thought, the usual concomitant of increased education.

It could be said that Canada, during the period from 1851 to 1891, was a society existing in a tension between the forces of change, on the one hand, and the forces of inertia, on the other. In the early part of the period, as a colony, Canada's role was one of supplier of raw materials for British industrialization. Industrialization was introduced into Canada only after Britain forced Canada's hand. Even so, Canada continued to perceive herself in her former role, with industrial technology introduced by Canada, in railway construction, in an effort to allow herself to continue in that role. It will be remembered that one of the core elements of the "National Policy" was concentration on a few staples for export. Also, the interests of the merchant capitalists perpetuated this course of action.

The high fertility of Canada at the beginning of the period has been viewed within the context of the Canadian

economic and social structure. Canada was a predominantly agrarian society, with a large concentration of population in rural areas. The economy was based on primary product extraction, in keeping with the needs of Great Britain. Thus, the economic situation was one in which large numbers of children per family was an economically sound response. When the population-land ratio became too high, the response was one of out-migration, as was evidenced in Quebec at the mid-century (Henripin and Peron, 1973). With the western frontier and the possibilities offered by the neighbouring American economy, out-migration must have appeared as an attractive alternative to limiting fertility. The religious nature of nineteenth Century Canadians, as evidenced by the debate concerning schools, probably reinforced this course of action.

When the externally generated forces of change began to emerge, altering the internal organization of Canadian society, fertility witnessed a sharp decline. The high fertility of a rural, agrarian society was no longer appropriate in a society undergoing urbanization and industrialization. A number of specific factors may have been conducive to lowered fertility: the introduction of women into the paid labour force; the experience of industrial employment; the urban influence of the immigrants; urban living and housing conditions. Possibly certain counterpressures were operating as well,

particularly religion and child employment.

One cannot help but be struck by the magnitude of the decline in fertility during this period. It almost seems that the fertility response to social and economic change was greater than the change itself. At the end of this period, Canada was still a predominantly rural society with a large agricultural population.

Second Stage

The second stage of fertility was a period of plateau in Canadian fertility. As revealed in Table VII, both the crude birth rate and the general fertility rate registered only slight decreases during this period with, for example, the crude birth rate declining slightly over 1 point. This 30 year period of relative constancy in fertility marks a radical departure from the first stage.

One would expect that Canadian society was similarly going through a period of little change in social and economic conditions. However, such was definitely not the case; this period was one of marked social change in Canada. In fact this period has been dubbed as the time of the "transformation" of Canada (Brown and Cook, 1974). This transformation took the form of change in the economy and change in population.

During this period, the population of Canada almost doubled, from 4,833,234 to 8,788,483. However, this

increase in population was unequally distributed throughout the country. The maritime provinces witnessed small growth, with one province, Prince Edward Island, registering decrease. The central provinces of Ontario and Quebec experienced a moderate amount of growth. It was the western provinces that registered extremely large percentage increases in population size. The years from 1891 to 1921 may well be termed the period of western expansion in Canada.

Of this total growth of 3,955,244, 29 percent has been attributed to net migration (McInnis,1974:41). Thus, unlike the prior period, net migration was positive, playing an important role in augmenting the size of the population. One aspect was increased immigration, particularly in the decades 1901-1911 and 1911-1921 (Kalbach and McVey, 1971:41). The foreign-born population increased from 628,492 in 1891 to 1,955,736 in 1921. As a result, the percent foreign-born in the total population grew from 13.3 percent to 22.3 percent, as shown in Table XI. As in the prior period, the western provinces received large numbers of immigrants. By 1921, the western provinces, comprising approximately one-quarter of the total Canadian population, contained 54 percent of the foreign-born.

Just as significant as the increasing numbers entering Canada, and the consequent increase in the percent foreign-born, was the changed ethnic composition of the

Table XI

Foreign-Born Population of Canada,[1] 1891-1921

	Number Foreign-Born	Percent of Total Population
1891[2]	628,492	13.3
1901	699,500	13.0
1911	1,586,961	22.0
1921	1,955,736	22.3

[1]Refers to present area of Canada, excluding Newfoundland.

[2]Excludes Saskatchewan, Alberta, Yukon and Northwest Territories.

Sources: Censuses of Canada: 1891 (v. 4, table D); 1921 (v. 2, table 35).

immigrants. No longer was the majority of immigrants from Britain and other preferred countries of western Europe; rather, southern and eastern Europeans comprised a large portion of the immigrants. This change was in part the reflection of an altered Canadian immigration policy which, in turn, reflected the changing economic conditions of Europe. Rapid industrialization in Britain and Germany meant that these countries could now absorb into industrial employment their rural populations, potential immigrants to Canada (Macdonald, 1966:147). Thus Canada was forced to look elsewhere for immigrants of agricultural background. The countries of Austria-Hungary, Italy, Poland and Russia, which could not absorb their surplus rural populations, provided the answer. As a result, the ethnicity of the

foreign-born population in Canada changed substantially. In 1891, 76.2 percent of the foreign-born population was of British origin; by 1921, the percent was 54.5.

The man particularly important in launching this increased immigration was Clifford Sifton, Minister of the Interior in the first Laurier cabinet. The settling of the west was the chief goal of the Sifton-led immigration policy. To that end, only one discriminatory principle was operative: urban immigrants were not desired (Brown and Cook, 1974:55). The issue of ethnicity took a back-seat to the rapid settling of rural immigrants. Immigrants of any ethnicity were desired as long as they possessed the requisite rural skills. The only exception was the Asian, who was considered particularly ill-suited for assimilation into Canadian society. Official opposition to Oriental immigration focussed on the fact that the Asians did not intend to settle permanently as agriculturists (Timlin, 1960:519).

This open-door policy concerning immigration from traditionally non-preferred countries was not without its critics. Some of the criticism was directed at the "foreign ways" that the immigrants brought with them, and lack of knowledge of British-based institutions and principles. Suggested solutions to the problems created by this new type of immigrant often revealed considerable ignorance. Of the Ukrainians, it was written "To Canadian

them, they have to be Christianized" (quoted in Brown and Cook, 1974:67).

Other criticisms of Sifton's policy were directed at the fact that, to a certain extent, it had not accomplished what it had set out to do. It was Sifton's goal that all immigrants would settle in the rural areas of the western provinces, forming the basis of Canadian agricultural development. However, there were no mechanisms to ensure that immigrants, once admitted into Canada, did, in fact, engage in the pursuits that were intended for them by the Canadian authorities. As a result, substantial numbers of immigrants either remained in the cities, or drifted in after agricultural failure (Brown and Cook, 1974:71). Statistics are not available concerning the exact numbers of immigrants who settled in urban areas rather than rural areas before 1921. The 1921 Census, which cross-tabulated place of birth and place of residence (rural/urban) indicated that a higher percentage of the foreign-born, 56.4 percent, was living in urban areas than of the native-born, 47.6 percent.

Canada's success in attracting greater numbers of immigrants, coupled with the departure from insistence on immigrants from preferred countries, served to alter the ethnic composition of Canadian society. Census data on ethnic composition show an increasing trend of non-British and non-French populations in Canada. In 1901, 12.3 percent

of the population was of non-British - non-French origin. By 1921, that percent had risen to 16.7 percent.

The majority of the "other population" was of European origin. However, the composition of the "other European" population altered during this period. In 1901, the large majority was of north and west European origin, 83.7 percent. By 1921, the percentage of north and west European origin had decreased to 50.9. The relative proportion of south and east European origins increased dramatically.

The provinces did not share equally in this increased diversity of population. In line with Sifton's policy of diverting immigrants to the western provinces, the prairie provinces and B.C. were characterized by a high percentage foreign-born, in the range of 40-60 percent on the average for this period. Similarly, the ethnic composition of the provinces varied significantly. If a province having at least 75 percent of its population of one ethnic group can be taken as ethnically homogeneous, then only four provinces were so characterized during this period. The provinces of Prince Edward Island, Nova Scotia, and Ontario were predominantly British; the province of Quebec was homogeneously French. New Brunswick, with a predominantly French province to the west and largely British provinces to the east, was characterized by a mixed British-French population.

The four western provinces displayed considerable ethnic diversity. The population of these provinces was divided between the British and non-British - non-French groups. Generally, the British formed the largest single group; however, the percentage of non-British - non-French or "other" was not inconsequential, in the range of 30-40 percent, on the average, throughout the period 1901-1921. Focussing on the population designated as "other" in the western provinces, it was, increasingly throughout the period, a European population. As European immigrants filled up the west, the relative size of the native Indian population decreased significantly.

The western provinces were the receptacle of the "other" European population in Canada, and increasingly so during this period. In 1901, 27.4 percent of the total "other" European population resided in the west; in 1921, the figure was 59.7 percent. In view of the fact that the western provinces comprised only 11.1 percent and 28.2 percent of the total Canadian population in 1901 and 1921, respectively, the concentration of "other" Europeans in the west was marked.

Coupled with the populating of the west of Canada was a significant transformation in the organization of the Canadian economy. This era was that of the "wheat boom." The importance of wheat in the economy expanded, replacing lumber and fur as the major exports of Canada.

A number of external factors operated at the beginning of this period to facilitate economic development in Canada. A general increase in world prices occurred after 1896, particularly for raw materials such as wheat; the growing urban and industrial populations of western Europe and the United States provided a market for Canadian foodstuffs; declining shipping costs helped to keep the price of Canadian exports competitive. These factors, coupled with population increase and its western extension, produced a boom in wheat production. In 1896, Canada produced approximately 8 million bushels of wheat; in 1911, 78 million bushels; in 1921, 151 million bushels. At the same time, the price of grain rose by over 60 percent (Brown and Cook, 1974:50-3). This increase in production both reflected and created the increased population in the western provinces.

The increased production and population of the west had a number of effects on the Canadian economy as a whole. The boom of the wheat economy served to attract the foreign investment necessary for industrial development. Also, the growing population of the west provided a market for the goods manufactured in the more eastern parts of Canada. The agriculture of the west made possible the industry of the east. Together, an economic base was created that could support an increasing urban population.

Canada underwent considerable urbanization during

this period. The percent urban increased from slightly under 30 percent in 1891 to a figure approaching 50 percent in 1921, as shown in Table XII. The increase in the population urban reflected the growth of industry brought about by the "wheat boom." Indeed, the growth of the industrial sector was substantial during this period. The number of manufacturing establishments (with 5 or more employees) increased from 14,650 in 1900 to 41,323 in 1921: the average capital investment increased from $30,000 to $78,000: the gross value of products increased from $481,053,000 to $2,747,900: the number of persons employed in manufacturing increased from 284,000 to 556,000 (Dominion Bureau of Statistics, 1924:415).

Table XII

Percent of Population Urban[1] Canada[2] 1891-1921

1891	29.8
1901	34.9
1911	41.8
1921	47.4

[1]Urban population, for 1891-1911, defined as the population residing in incorporated cities, towns, and villages of 1,000 or more. In 1921, urban population defined as the population residing in incorporated cities, towns and villages of 1,000 and over and unincorporated towns and villages of 1,000 and over and unincorporated suburbs, adjacent to incorporated cities, towns, and villages of 5,000 and over, which had a population density of at least 1,000 persons per square mile.

[2]Excludes Yukon and Northwest Territories.

Source: Stone (1967:29)

Thus, the "wheat boom" had stimulated considerable growth and change in the Canadian economy. By 1914, the "wheat boom" was over due to a number of factors: rising interest rates; declining foreign investment; falling prices for wheat; and prairie drought. However, the economic difficulties and the possibility of a depression were averted by World War I. The "wheat boom" was substituted by a "war boom." As the overseas demand for Canadian foodstuffs was high, prices of Canadian agricultural exports rose. An increasing munitions industry served to bolster a sagging manufacturing sector.

The changing distribution of occupations throughout this period reflects the "maturing" of the Canadian economy. The proportion of the labour force engaged in agriculture declined significantly, as shown in Table XIII. Although the percent engaged in manufacturing and building occupations did not alter noticeably, the occupations that are supported by or support the industrial sector, trade and merchandising and the professions, registered increases. The percent of domestic and personal service occupations decreased, reflecting, in the main, the lessened importance of servants in an industrial society.

The percentage of women in the paid labour force increased a few points, to approximately 16 percent in 1921. More significant was the changing occupational distribution of the female labour force. The percent engaged in

Table XIII

Occupational Distribution, Canada,[1] 1891-1921

	Percent in Occupation			
	1891	1901	1911	1921
Agriculture	44.5	43.9	34.3	32.8
Manufacturing and Building	26.3	27.9	27.1	26.5
Domestic and Personal Service	8.1	8.6	7.8	6.7
Trade and Merchandising	6.8	9.0	10.4	11.8
Professions	3.9	4.7	4.4	7.0

[1]Excludes Yukon and Northwest Territories.

Source: Census of Canada: 1921 (v. 4, table 1).

manufacturing and personal and domestic service dropped substantially. Together, these two occupational categories comprised nearly 80 percent of the working women in 1891; by 1921, the figure was less than 50 percent. Large increases were registered in the professions, mainly teaching and nursing, and the commerce-related occupations.

A number of changes occurring in this second period would lead us to expect further declines in fertility. The increase in the percent urban, the declining proportion engaged in agricultural occupations, the growth of industry, are among the factors conducive to lowered fertility. Certainly the declines experienced in the first period are congruent with such a framework. Yet, declines were not registered; rather fertility rates remained relatively constant. Rather than discard these explanatory variables,

and evidence to be presented shortly guards against their dismissal, one should look elsewhere for a variable or set of variables that perhaps exerted a counter-pressure against the fertility-lowering forces of modernization.

The Vital Statistics report of 1921 presents certain information on births cross-tabulated by characteristics of the mother, namely province of residence, place of residence (rural or urban), and place of birth of mother, for all existing provinces in 1921 except Quebec. With the data given, total fertility rates were calculated for the specified sub-populations of Canada, using the indirect method as set forth by Shryock and Siegel (1973:484).[6] The rates, which indicate the total number of children a woman would bear if she bore children at the age-specific schedule prevailing in a given year (1921 in this case), are presented in Table XIV.

A rather strong fertility differential in terms of rural/urban place of residence may be observed. Rural women, on the average, had one more child than urban women. This differential, which is an expected one within the general framework of demographic transition theory, reflects the differential role of children in rural and urban environments, as well as the differing conditions of, and orientations toward, living in the two settings. This differential also serves to explain the regional variations in total fertility that are presented in Table XIV. The

Table XIV

Total Fertility Rates for
Selected Sub-Populations of Canada,[1] 1921

Characteristics of Mother	Total Fertility Rate
Rural	4.3
Urban	3.3
Canadian-Born	3.5
Total Foreign-Born	4.6
British-Born	3.3
Maritimes	4.2
Ontario	3.6
Prairies	4.5
British Columbia	3.1

[1]Excludes Quebec, Yukon, and Northwest Territories.

Source: Calculated from data presented in the 1921 volume of Vital Statistics and the 1921 Census (v. 2, tables 6 and 7).

maritime provinces and the prairie provinces were two regions of high fertility in 1921; the percent of the female population aged 15-49 that was urban was 43 and 42, respectively. On the other hand, Ontario and British Columbia, with 63 and 53 percent urban, respectively, exhibited much lower total fertility rates.

If the rural/urban differential, as it existed in 1921, can be taken as indicative of rural/urban differences earlier on, one is faced with the question why the increasing urbanization of this period did not result in declining fertility. A partial answer lies in the place of

birth differentials that are presented in Table XIV. It can be seen that the fertility of foreign-born women was much higher than the fertility of the Canadian-born, with the exception of British-born women, who displayed a total fertility rate lower than the Canadian-born.[7] It will be recalled that during this period, the percent foreign-born of the total population grew substantially and, within the foreign-born population, the percent British-born declined significantly. Given the differentials indicated in 1921, the changing composition of the Canadian population, with the addition of Europeans from high-fertility regions, may have operated to counteract forces conducive to lowered fertility, producing a period of constancy in fertility rather than the expected decline. In this way, the role that western expansion played was somewhat paradoxical: on the one hand, it provided the impetus for industrial development and growth; on the other hand, it introduced into Canada people with rural, high-fertility backgrounds who would be expected to behave in ways congruent with that background for some period of time.

Third Stage

The distinctive characteristic of the third stage of fertility, from 1921 to 1961, was fluctuation. While the first stage was marked by steady decline in fertility, and the second stage displayed virtually no change in fertility,

the third stage witnessed a trend of considerable unevenness. In the first two decades of this period, and particularly in the decade of the 1920s, fertility declined substantially: the crude birth rate fell more than 8 points; the general fertility rate was lowered by 39 points. By 1951, fertility had made a marked recovery, with, for example, the crude birth rate in 1951 over 4 points higher than its 1941 counterpart. This heightened level of fertility continued on until 1961. The crude birth rate registered a slight decline between 1951 and 1961 but, the general fertility rate, a more refined measure than the crude birth rate, showed a small increase. As a result of this protracted period of relatively high fertility, the percent reduction in fertility over the entire third stage was quite small, in the range of 12-16 percent.

The fluctuations in fertility that characterized the third stage may be viewed in the context of the changing social and economic conditions of the time. The two most prominent events were the economic depression that struck in the late 1920s and World War II, events which affected the fertility patterns of the entire western world.

Between 1921 and 1931, the crude birth rate was reduced by 20.8 percent, the largest decade reduction that had so far occurred. The depression, which commenced in 1929, played a contributing role. The depression hit Canada hard in her role as exporter of primary products, causing a

significant reduction in standard of living. However, the effects of the depression were not equally felt in all parts of the country. The region most dependent on primary product exportation, the prairie provinces, was the hardest hit. Other areas, notably Nova Scotia, experienced much less severe decreases in income (Report of the Royal Commission on Dominion-Provincial Relations, 1940:150). If the depression was a major factor determining reduced fertility, one would expect the declines in fertility to reflect its differential impact. The data bear out this expectation. While the crude birth rate of Canada as a whole declined 20.8 percent, the prairie provinces registered a reduction of 26.2 percent whereas the crude birth rate of Nova Scotia declined only 11.7 percent.[8] Also, urbanization continued during this decade, with the percent urban increasing from 47.4 to 52.5, as shown in Table XV. Given rural/urban differentials in fertility, the trend of increasing urbanization was another factor operating to lower Canadian fertility rates. The depression and increased urbanization should perhaps not be viewed as separate phenomenon, as it is likely that depressed rural conditions forced people into the cities in search of employment.

The second decade of this period witnessed further declines in fertility with, for example, the crude birth falling 7.3 percent to a low of 22.9 in 1941. The economic

Table XV

Percent of Population Urban[1] Canada,[2] 1921-1961

1921	47.4
1931	52.5
1941	55.7
1951	62.4
1961	69.7

[1]Urban population defined as the population residing in incorporated and unincorporated cities, towns and villages of 1000 and more, and unincorporated suburbs, adjacent to incorporated cities, towns and villages of 5000 and over, which had a population density of at least 1000 persons per square mile.

[2]Excludes Yukon and Northwest Territories.

Source: Stone (1967:29).

difficulties of the immediate past were over, aided by the war which commenced in 1939. It is likely that the war effort produced the economic stimulation conducive to heightened fertility; however, other war-related factors, such as the separation of couples and the uncertainties of life, exerted counter-pressures.

The heightened fertility of 1951 reflects what has been termed the "post-war baby boom," a phenomenon common to all western populations. The "making up" of marriages and babies postponed by the war resulted in increased period fertility rates. This "making up" was possible given the favourable economic conditions in the post-war west. Yet, in Canada, this boom continued on until 1961, with 1961 general fertility rates even higher than the 1951 rates.

Data on age-specific fertility, available for the entire period, shed considerable light on the pattern of fertility change. Age-specific fertility rates, presented in Table XVI, indicate the differential fertility behaviour of the separate age groups within the childbearing ages throughout this third stage.

Table XVI

Age-Specific Fertility Rates Canada,[1] 1921-1961

	Rate per 1000 women aged:							Total Fertility Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1921	38.8	185.2	225.8	193.2	135.3	61.4	8.2	4.2
1931	31.7	146.0	186.4	154.5	109.6	46.7	5.6	3.4
1941	31.2	142.2	164.2	125.6	82.1	32.4	3.6	2.9
1951	48.1	188.7	198.8	144.5	86.5	30.9	3.1	3.5
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	3.8
	Percent Change							
1921-31	-18.3	-21.2	-17.4	-20.0	-19.0	-23.9	-30.2	-19.0
1931-41	-1.6	-2.6	-11.9	-18.7	-25.1	-30.6	-35.7	-14.7
1941-51	+54.2	+32.7	+21.1	+15.0	+5.4	-4.6	-13.9	+20.7
1951-61	+21.0	+23.8	+10.3	+0.3	-6.2	-7.8	-22.6	+8.6
1921-61	+50.0	+26.1	-2.9	-25.0	-40.1	-53.6	-70.7	-9.5

[1]Excludes Newfoundland for all years and Yukon and Northwest Territories prior to 1951.

Source: Vital Statistics: 1971 (Births: table 10), with corrections for under registration in 1921-1941.

The pervasive effect of the depression can be seen in the changes occurring at each age group in the decade 1921-1931. All age groups experienced a percent reduction in fertility of approximately 20 percent. However, after 1931, the differential behaviour of younger women and older women can be seen. In every decade after 1931, women of ages 35 and over displayed declining fertility. Even in the decade from 1941 to 1951, when fertility rose dramatically, the fertility of women aged over 40 declined. On the other hand, the fertility of younger women displayed a very different pattern. Women in the ages under 30 experienced only slight reductions in the decade from 1931 to 1941, much smaller than that of their older counterparts. In the second half of this period, the fertility of younger women, aged under 30, rose sharply. Thus, the upswing in fertility experienced in 1951 and 1961 was caused by the higher fertility of younger women, and was not the result of a general increase in fertility at all ages. While the total fertility decreased 9.5 percent over the entire period, the rates of change for the separate age groups showed a large variation: the fertility of younger women increased a great deal, 50 percent in the case of women aged 15-19; women aged 25-29 displayed little change; the fertility of women aged over 30 decreased, with the extent of decrease varying positively with advancing age, such that women of the oldest group, aged 45-49, experienced a

reduction of 70.7 percent.

The changing structure of age-specific fertility indicates a change in the mean age of childbearing. This change may be seen, in a rough way, by comparing the ratio of the age-specific fertility rate of women aged 25-29 to that of women aged 20-24. In 1921, the ratio was 1.22, indicating a higher fertility for women aged 25-29; in 1961, the ratio was .94, indicating that peak childbearing had shifted from the age group 25-29 to the age group 20-24. The mean age at childbearing, as presented in Table XVII, shows a steady downward trend, from age 30 in 1921 to age 27.8 in 1961. The bulk of this 2.2 year decline in mean age was concentrated in the latter two decades of this period. Therefore, one factor accounting for the heightened overall level of fertility in 1951 and 1961 was a downward shift in mean age of childbearing, which serves to inflate measures such as the crude birth rate and the general fertility rate because of the proportionately larger number of women at younger ages. Change in the age pattern of childbearing is usually related to change in the timing of marriage, a variable that will be considered in further detail later.

Thus, in the midst of the fluctuation of the third fertility stage, elements of constancy may be found. Women in the older age groups exhibited declining fertility rates throughout the entire period, even in the face of the substantial increase in overall fertility experienced after

Table XVII

Mean Age at Childbearing, Canada,[1] 1921-1961

	Mean Age[2]
1921	30.1
1931	29.9
1941	29.2
1951	28.5
1961	27.8

[1]Excludes Newfoundland for all years and Yukon and Northwest Territories prior to 1951.

[2]Calculated with the data presented in Table XVI, using the formula set down by Shryock and Siegel (1973:473).

World War II. Also, the mean age at childbearing registered a steady, downward trend. Therefore, the third stage of fertility is best characterized as one in which women began and completed their families at progressively earlier ages, rather than one in which completed family size changed substantially.

Data presented in the Vital Statistics publications of 1951 and 1961 allow for the estimation of the average childbearing schedule of women. These estimates, calculated from age-birth order-specific fertility rates, as described by Shryock and Siegel (1973:476), are presented in Table XVIII. It can be seen that, at each birth order, the median age of mother declined between 1951 and 1961. Women in 1961 completed their families, on average, at a younger age than women in 1951, despite the fact that the total fertility

rate was higher in 1961. Thus, the rate of childbearing was accelerated. In 1951, the average time span between the first and last (3.5) child was 2.6 years per child; in 1961, the comparable figure was 2.2 years.

Table XVIII

Aspects of Average Childbearing Schedule Canada,[1] 1951-1961

	1951	1961
Median Age of Mother at each Birth Order:		
First	23.5	22.9
Second	26.5	25.0
Third	28.7	27.7
Fourth	30.3	29.5
Fifth	31.8	31.2
Sixth	33.0	32.4
Seventh	34.0	33.6
Eighth +	37.2	36.6
Total Fertility Rate:	3.5	3.8
Median Age at Completion:	29.5	29.1
Rate of Childbearing:[2]	2.6	2.2

[1]Excludes Newfoundland.

[2]Rate of childbearing refers to the average number of years per child between the first and last child. Calculated by dividing the average number of years between the first and last child by the average number of children born between the first and last child.

Sources: Vital Statistics: 1951 (tables 38 and 40); 1961 (table B11). Census of Canada: 1971 (Cat. 92-715, table 7).

Viewed in this light, the rise in fertility, especially in the decade 1951-1961, seems less anomalous: the prosperity of the times allowed women to alter their childbearing schedule. However, it should be remembered that younger age at childbearing brings with it the possibility of larger completed family size as the period of exposure to the risk of additional pregnancies is lengthened to include years of relatively high fecundity.

Data presented in the Vital Statistics publications for the period from 1921 to 1951 allow for the examination of selected differentials in fertility. Total fertility rates for sub-populations of Canada, calculated using the indirect method discussed earlier, are presented in Table XIX.

Rural/urban differentials were strong for all years except the war year of 1941. However, the trends of rural and urban fertility differed markedly. Urban fertility underwent a general trend of decline, with the 1951 rate 21 percent lower than the 1921 rate. On the other hand, rural fertility, after declining substantially from 1921 to 1941, displayed a large increase in the decade 1941-1951, increasing approximately 86 percent. As a result, the rural total fertility rate in 1951 was 26 percent higher than the 1921 rate. In other words, the "baby boom" in the post-war years was a rural phenomenon in Canada. Partial explanations lie in differential rural/urban marriage patterns and

Table XIX

Total Fertility Rates for Selected Sub-Populations of Canada,[1] 1921-1951

	1921[2]	1931	1941	1951
Rural	4.3	4.1	2.9	5.4
Urban	3.3	2.9	3.0	2.6
Canadian-Born	3.5	3.5	3.1	-
Total Foreign-Born	4.6	3.1	2.2	-
British-Born[3]	3.3	2.6	1.9	-
Born In:				
Northwest Europe[4]	-	3.9	2.4	-
Southeast Europe[4]	-	3.9	2.3	-
United States	-	3.2	2.5	-
Asia	-	6.1	3.9	-
Ethnic Origin:				
British	-	2.6	2.3	3.1
French	-	4.7	3.9	4.1
North and West Europe[4]	-	3.3	2.8	3.5
East and South Europe[4]	-	4.2	2.7	3.0
Asian	-	5.8	3.6	3.0

[1]Excludes Newfoundland, Yukon and Northwest Territories.

[2]Excludes Quebec.

[3]Includes England, Wales, Scotland, Ireland.

[4]Refers to slightly varying populations in different years due to census inconsistencies.

Sources: Calculated from data presented in Vital Statistics: 1921 (tables 4 and 7); 1931 (tables 21, 27, and 29); 1941 (tables 29, 36 and 38), 1951 (tables 27 and 34) and in the Censuses of Canada: 1921 (v. 2, tables 6 and 7); 1931 (v. 3, tables 13, 27, and 29); 1941 (v. 3, table 7 and v. 4, table 3); 1951 (v. 2, tables 1 and 4).

the migration of young women from rural areas to urban areas, in the light of employment opportunities in the cities in the post-war era, resulting in a sex ratio favourable to early marriage and, hence, early childbearing in the rural areas and unfavourable in the urban areas, due to a disproportionate number of young women relative to young men. These variables will be examined later.

Ethnic differentials in total fertility rate may be observed through the period for which data are available, 1931-1951, although the extent of the differentials narrow over time. In 1931, a difference of 3.2 children per woman existed between the lowest fertility group, the British, and the highest group, the Asians. Omitting the Asians, who comprise a small proportion of the Canadian population, the difference remains large with 2.1 children per woman separating British women and French women. By 1951, the differential had narrowed to approximately 1 child per woman. The convergence in total fertility rates was due to differential trends of change within the various ethnic categories. The total fertility rates of the three groups displaying a rate of over 4 in 1931, the French, the eastern and southern Europeans, and the Asians, showed an overall trend of decline between 1931 and 1951. The rates for French and eastern and southern Europeans underwent some increase between 1941 and 1951, but of minor significance. On the other hand, the lower fertility groups of 1931, the

British and the western Europeans, registered large increases in the decade 1941-1951, 35 percent in the case of the British and 25 percent in the case of the Western Europeans. Thus, as was the case in terms of rural/urban differentials, the increase in fertility after World War II was not equally distributed throughout the various sub-populations of Canada. Rather, women of British and western European origin contributed disproportionately to the "boom"; perhaps reflecting the favourable social and economic position of these groups, allowing them to engage in earlier marriage and earlier childbearing in the prosperous years following the war.

Differentials by place of birth of mother are available for the period 1921-1941. The size of the 1921 Canadian-born/foreign-born fertility differential should be interpreted with caution as the province of Quebec is excluded. Given the fact that Quebec was largely comprised of French women born in Canada, and that French-Canadian fertility was high at this time, the total fertility rate for the Canadian-born, as presented in Table XIX, is lower than it would be if Quebec was included. Therefore, the Canadian-born/foreign-born differential is larger than it would otherwise be. Given the estimated total fertility rate of Quebec in 1921 (5.2) and the percent of all women residing in Quebec (26.7 percent), a rough re-estimate of the Canadian-born total fertility rate in 1921 is 3.9.

Thus, the differential remains, with the foreign-born exhibiting higher fertility than the Canadian-born, but it is smaller.

In 1931, the differential was reversed; the foreign-born registered a lower total fertility rate than the Canadian-born. This reversed differential reflects the fact that the foreign-born reduced their fertility substantially more than did the Canadian-born. Using the re-estimated 1921 total fertility rate for the Canadian-born, 3.9, the reduction from 1921 to 1931 was .4 or 10 percent. The total fertility rate of the total foreign-born, on the other hand, declined 1.5 or 32.6 percent. This decline exceeds the decline experienced by the British-born; therefore, the foreign-born of origins other than British reduced their fertility more than did the British-born. The same pattern was exhibited in 1931-1941: the total foreign-born experienced larger declines than the Canadian-born; the non-British foreign-born displayed larger reductions than the British-born. As a result, the Canadian-born/foreign-born fertility differential widened in 1941, and the differentials amongst the sub-populations of the European-born narrowed.

If the place of birth differentials of 1921 can be taken as indicative of the second stage of fertility as a whole, then the introduction of increasing numbers of the foreign-born in this period operated as a factor increasing

the fertility of Canada. By 1931, this situation had changed, suggesting that the role of the foreign-born in the third stage of fertility was one of lowering overall Canadian fertility.

Two characteristics emerge as important in the third stage of fertility. One, the period was characterized by marked fluctuation, as Canada faced first economic depression, then war. Despite the trend of fluctuation, one constant element emerged: the age pattern of fertility underwent a continual trend towards younger childbearing. Two, the various sub-populations of Canada exhibited differential fertility and differential trends over time. Rural fertility was higher than urban fertility; women of British origin displayed lower total fertility rates than other women; the foreign-born were characterized by lower fertility than the Canadian-born, at least in 1931 and 1941. The rise in fertility in 1951 was due to the increased fertility of women in rural areas; although all ethnic groups experienced some increase in total fertility in 1951, the rates for the British and western European women rose proportionately higher than the rates of the other ethnic groups, particularly French women whose fertility rose only a small degree.

Fourth Stage

The fourth stage of fertility, the decade from 1961 to 1971, was marked by a large-scale reduction in

fertility. The crude birth rate declined from 26.0 to an unprecedented low of 16.8, a reduction of 35.4 percent, the largest decline occurring in any decade or in any stage. Similarly, the general fertility rate declined by 39.1 percent. The fourth stage, therefore, signalled a return to low fertility after a twenty-year upswing.

Data on age-specific fertility are available for this period and are presented in Table XX. As in the third stage, childbearing was concentrated in the age groups from 20 to 34. All age groups experienced declining fertility in this period. However, decline was not evenly distributed; again, the older age groups registered larger declines than the younger groups. As a result, the mean age at childbearing declined from 27.8 to 27.1. Thus, despite their different trends, the third and fourth stages of fertility were characterized by a common feature: a progressively younger age at childbearing.

The combination of significant reductions at all ages and the larger reductions at the older ages suggests that the decade of 1961-1971 signals the final stage of demographic transition. Women of the older age groups had been reducing their fertility since at least 1921, the year when age-specific data first became available in Canada. But, it was only in the decade 1961-1971, that younger women reduced their fertility a significant amount, in excess of 30 percent.

Table XX

Age-Specific Fertility Rates, Canada,[1] 1961-1971

	Rate per 1000 women aged:							Total Fertility Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	3.8
1971	40.1	134.4	142.0	77.3	33.6	9.4	0.6	2.2
	Percent Change							
1961-71	-31.1	-42.5	-35.2	-46.7	-58.6	-67.0	-75.0	-42.0

[1]Excludes Newfoundland.

Source: Vital Statistics: 1971 (Births, table 10).

Caution is required in the interpretation of the trend of reduced age at childbearing. Such reduction may mean that women are bearing children at younger ages at each birth order. On the other hand, the reduction may be due to a decline in births at higher orders. The data presented in Table XXI shed some light on this matter. It can be seen that, between 1961 and 1971, at each birth order, the median age of mothers increased. Also, the rate of childbearing decelerated. In other words, women in 1971 were, relative to 1961, postponing births to some degree. The decline in the average age at childbearing resulted from the sharp decline in completed family size, i.e., a concentration of births at the lower orders and, therefore, at the younger ages. Women in 1971 were completing their families at younger ages because they were finishing childbearing at

Table XXI

Aspects of Average Childbearing Schedule
Canada,[1] 1961-1971

	1961	1971
Median Age of Mother at each Birth Order:		
First	22.9	23.3
Second	25.0	26.2
Third	27.7	28.6
Fourth	29.5	30.8
Fifth	31.2	32.6
Sixth	32.4	33.6
Seventh	33.6	35.0
Eighth +	36.6	37.2
Total Fertility Rate:	3.8	2.2
Median Age at Completion:	29.1	26.7
Rate of Childbearing:[2]	2.2	2.8

[1]Excludes Newfoundland.

[2]Rate of childbearing refers to the average number of years per child between the first and last child. Calculated by dividing the average number of years between the first and last child by the average number of children born between the first and last child.

Sources: Vital Statistics: 1961 (table B11); 1971 (Births, table 13). Census of Canada: 1971 (cat. 92-715, table 7).

lower orders, rather than bearing lower order children at younger ages.

As the Vital Statistics discontinued tabulating births by characteristics of the mother, fertility differentials, as presented in the discussion of the third

stage, are not available. Given the lack of data, the following discussion will be speculative in nature.

Two factors that have been identified as determinants of recent lowered fertility in Canada are the increased availability and effectiveness of contraception and the changing role of women in society (Grindstaff, 1975). There can be no denying that availability of contraceptives has increased, with the breaking down of the social and legal barriers to distribution and use, and that effectiveness has increased in the era of the pill and the I.U.D. However, the degree to which lowered fertility is "caused" by advances in contraceptive technology and distribution has been seriously questioned (Blake and Das Gupta, 1974).

The fact that Canadians were able to lower their fertility substantially in an era in which contraceptives were neither widely available nor notably effective suggests that advances in contraceptive technology and availability act as facilitators rather than as causal agents. It remains a moot point whether the fertility level of 1971 could have been achieved in the absence of increased availability of modern contraceptives. However, the fact that the total fertility rate of 1971, 2.2 children per woman, was achieved by certain sub-groups of the Canadian population in 1941 suggests the possibility, at least, that the low level of fertility in 1971 could have been achieved

without modern contraception.

The changing role of women in society relates to increases in alternatives to childbearing and childrearing. One alternative lies in employment outside the home, which has two consequences in terms of fertility behaviour. On the one hand, it can serve to re-define, for women, their selves and their potential contribution to the wider society. On the other hand, it means that the worker role and the domestic role, which contain conflicting expectations and which both carry heavy demands, in terms of time and energy, have to be accommodated. The perceived advantages of the first consequence have led to an accommodation in which the demands of the traditional, domestic role have been lightened. One way to affect such an accommodation is through lowered fertility.

The existence of change in the female role in society can be seen in data concerning the increased labour force participation of women in the period 1961-1971. The percentage of women aged 15-64 in the labour force increased from 33.5 percent in 1961 to 44.2 percent in 1971. Even more significant, the percent of married women grew from 23.7 percent in 1961 to almost 40 percent in 1971. Therefore, this decade marked a significant augmentation of women into the labour force who, given the tradition role of women in society, typically remained inside the home.

These data, although indicating significant change

in female role behaviour, perhaps do not reveal the magnitude of change that occurred in the decade of the 60s. The emergence of the Women's Movement operated to re-define behaviour and perceptions in ways that do not surface in labour force participation statistics.

Coupled with the transformation of the role of women in society, and perhaps not unrelated with it, was the emergence of a full-fledged consumer society. Aided by the forces of the media, advertising and easy availability of credit, the possession of "things" competed with the ever-increasing costs of children in an urban, industrial environment and served as a status vehicle in its own right. The increased labour force participation of women both reflects and helps to create this altered set of priorities.

The three factors of increased contraceptive technology and availability, the changing role of women, and emphasis on consumption operated together to affect the fertility reduction of the fourth stage. Advances in contraception placed fertility behaviour in the realm of choice behaviour; the choice itself was structured by changing priorities and perceptions as determined by transformations in the wider society.

Footnotes

[1]The theory of demographic transition in its entirety is concerned with both mortality change and fertility change, in relationship with population growth. Mortality is generally excluded from the analysis here as a result of severe data limitations and in view of the general finding that mortality levels and trends are less sensitive to social influences than fertility levels and trends. Also, the impact of fertility on future population patterns is greater than the impact of mortality.

[2]Demographic transition theory has been criticized for a purported failure to account for demographic processes in the non-western world. Examples are Caldwell (1976) and Okediji (1974). The direct applicability or inapplicability of demographic transition theory to non-western populations, although an important issue in its own right, is not of concern here. Rather, the aim is to examine fertility transition in a western, European-based society in light of the theory that was based on that particular experience.

[3]The knowledge and accessibility of the means to control fertility similarly improves with modernization. However, one cannot argue that fertility reduction is caused by improvements in contraceptive technology and the knowledge and accessibility thereof. It seems likely that improved means operate to facilitate fertility reduction, once increased modernization has created to motivation to do so.

[4]The cities are Toronto, Hamilton, Kingston, Ottawa, Montreal, Quebec City, Halifax, St. John, and Winnipeg.

[5]There exists certain evidence that suggests that some establishments were much larger than this average figure. In 1882, the Royal Commission enquiry into the "working of the mills and factories of the Dominion and the labour employed therein" investigated 465 factories employing, in total, 43,571 persons, or an average of 94 persons per establishment (Cross, 1974:74).

[6]This method, which takes into account age-sex differences, employs the use of a standard set of age-specific rates. The standard chosen was that of Canada as a whole in 1921.

[7]The differentials are somewhat distorted, due to the fact that data for the province of Quebec are lacking for 1921. The exclusion of French Canadian women, who are almost totally Canadian-born, operates to lower the total

fertility rate for the Canadian-born. If Quebec data were included, one would expect a higher rate for the Canadian-born, and, therefore, a smaller differential between the total foreign-born and the Canadian-born and a larger differential between the Canadian-born and the British-born.

[8]Estimated from data presented in 1971 Vital Statistics (Births), table 5, with corrections for underregistration.

CHAPTER IV

COMPONENTS OF FERTILITY CHANGE

Fertility transition results from the composite effect of change in a number of variables. In an effort to understand the underlying mechanisms at work in determining fertility change in Canada, the major factors operating upon societal fertility are analysed in this chapter. These factors, which include age-sex compositional factors, female nuptiality, marital fertility and non-marital fertility, are examined in order to assess the role that each plays in fertility change in Canada over the entire period from 1851 to 1971 and in each of the four stages of fertility. Also, this chapter seeks to describe and analyze provincial fertility in terms of level, trend, and temporal convergence. The components of fertility change are examined at the provincial level, in an effort to understand the differential influences at work, and thereby, more fully explain provincial fertility variation.

The importance of a component analysis in the Canadian case lies in the complexities of fertility transition that have come to light in recent research concerning the European experience (Coale, 1969; Coale,

1973; Demeny, 1968; Knodel, 1974; Livi-Bacci, 1971; Livi-Bacci, 1977; van de Walle, 1968; van de Walle and Knodel, 1967). This Princeton-based research has focussed particularly on the variables of marital fertility and female nuptiality in the determination of fertility level and trends in the fertility transition of various European societies. In this conceptualization, fertility level departs from the physiological maximum as a result of the operation of two main types of control: the limitation of fertility within marriage, or what has been termed non-Malthusian control, and the limitation of marriage within a population, Malthusian control. A population can resort to one, or both, mechanisms in an effort to limit fertility.

Wide variation has been found, between societies and between different provinces within European national boundaries, in level of general fertility prior to the onset of sustained decline. This variation is due to the combined effects of differences in level of marital fertility and level of female nuptiality. That is, prior to major social change that affected sustained fertility reduction, European populations differed in fertility level and in the mechanisms that determine that level. Also, two populations with essentially similar fertility levels may have achieved that level through a differential mixture of components. The timing and path of sustained fertility decline is, similarly, determined by the joint effects of the components

of marital fertility and female nuptiality.

In pre-modern western European societies, fertility did not approach maximum levels. Departure from maximum levels was, in large part, achieved through marriage limitation, or the Malthusian control mechanism. However, evidence suggests that deliberate control of fertility within marriage occurred as well, at least in some western populations (Coale, 1973:59). The sustained fertility decline, which commenced in most western European countries in the last decades of the 1800s, was accomplished through the widespread adoption of control of fertility within marriage, although Malthusian control continued to operate as well. After substantial reduction in marital fertility had been accomplished, the mechanism of marriage limitation ceased to operate in its former fashion. Beginning in the 1940s, western European societies abandoned the pattern of late age at marriage and high prevalence of permanent non-marriage (Hajnal, 1965:101). As a result, levels of overall fertility rose rather sharply before decline recontinued. Opinions differ as to the nature of the relationship between the mechanisms of Malthusian and non-Malthusian control. On the one hand, Coale (1969:17) argues that reduction in marital fertility operated in a causal way to increase nuptiality. Van de Walle (1968:499), on the other hand, argues that the abandonment of Malthusian control was a "natural tendency" which the declines in marital fertility

made possible.

Against the background of this general pattern of decline, wide provincial variations have been observed, in terms of the pre-decline mix of the levels of the components of fertility, the timing of marital fertility decline, and the relationship between levels of socio-economic development and levels of marital fertility. Coale (1973: 67) has posited two hypotheses, both emphasizing cultural factors, to account for the observation that fertility decline in Europe displayed a strong regional pattern. One hypothesis states that the culture operating in a given region determines the extent of resistance that fertility control within marriage will meet. The second hypothesis focusses upon the mechanism of diffusion of modern demographic behaviour and ideas. Regions, characterized by a common language and culture, act as natural boundaries within which diffusion, through imitation and/or informal communication, can occur. Similarly, regions act as barriers confining the spread of controlled fertility.

The complexity of European fertility decline, in terms of the differential factors determining trend and in the extent of regional variation, illustrates the importance of a component analysis for the comprehension of Canadian fertility transition. An understanding of fertility decline can only be accomplished if the underlying mechanisms so determinant are sorted out.

Component Analysis of Canadian Fertility

Any given value of the crude birth rate is actually the composite of a number of factors operating together, such as age-sex distribution, the proportion of females married (or unmarried), and the fertility of married and unmarried women. These factors are related together arithmetically such that:

(1) $B/T = B/F^* \times F^*/F \times F/T$

where:

B = total births
F*= 1000 women 15-49 years
F = 1000 total women
T = 1000 total population

and (2) $B/F^* = LB/M^* \times M^*/F^* + IB/UM^* \times UM^*/F^*$

where:

LB = total legitimate births
IB = total illegitimate births
M* = 1000 married women 15-49 years
UM*= 1000 unmarried women 15-49 years

From expression (1), it can be seen that the crude birth rate (B/T) is the product of the general fertility rate (B/F*) and two demographic structural factors, the sex ratio and the proportion of the female population in the child-bearing ages. Expression (2) shows that the general fertility rate is itself a function of four factors, two of which are related to fertility, LB/M* or the marital fertility rate and IB/UM* or the non-marital fertility rate, and two of which are related to female nuptiality, M*/F* or the proportion married and its converse, UM*/F*, the

proportion unmarried. Thus, an analysis of the course of fertility decline requires an examination of the roles played by demographic factors, marriage factors, and "fertility" factors.

Table XXII presents data for the observed levels of the factors specified by expressions (1) and (2). These data provide a general overview of the changes that occurred in the relevant variables. On the broadest level, it can be seen that the trend of the general fertility rate paralleled closely the trend of the crude birth rate, due to the relatively small changes occurring within the age-sex distributional factors. Breaking down the general fertility rate into its constituent parts, it can be noted that the overall trend in marital fertility was one of decline, except for the decade spanning the 40s and, as such, differed from the pattern of reduction exhibited by the crude birth rate and the general fertility rate. The data presented in Table XXII provide the hint that a changing marriage pattern, as measured by the proportion of women aged 15-49 married, was a factor accounting for the disparity between the trend of the crude birth rate and the general fertility rate, on the one hand, and the marital fertility rate, on the other. The pattern of change in the proportion married, one of slight decline in the latter half of the nineteenth Century followed by an upswing in the early years of this century and another more marked increase,

Table XXII

Observed Values of the Components of the Crude Birth Rate and the General Fertility Rate. Canada,[1] 1851-1971

Year	LB/M*	x	M*/F*	+	IB/UM*[6]	x	UM*/F*	=	B/F*	x	F*/F	x	F/T	=	B/T
1851[2]	357.0		.5670		9.5		.4330		206.5		.4678		.4849		46.8
1861[3]	340.2		.5163		7.4		.4837		179.2		.4785		.4860		41.7
1871[4]	311.6		.5179		6.8		.4821		164.7		.4821		.4937		39.2
1881	276.9		.5107		5.9		.4893		144.2		.4958		.4939		35.3
1891	253.6		.5078		5.3		.4922		131.4		.5126		.4816		32.4
1901	-		-		-		-		133.4		.5061		.4877		32.9
1911	227.9		.5587		5.9		.4413		129.9		.5101		.4697		31.1
1921	213.1		.5880		6.8		.4120		128.1		.5031		.4845		31.2
1931	170.9		.5620		7.9		.4380		99.5		.5140		.4821		24.7
1941	151.0		.5669		8.1		.4331		89.1		.5269		.4872		22.9
1951[5]	160.3		.6608		12.4		.3392		110.1		.5001		.4940		27.2
1961[5]	154.7		.6957		16.7		.3043		112.7		.4680		.4945		26.0
1971[5]	95.4		.6543		17.9		.3457		68.6		.4903		.4995		16.8

[1]Refers to present area of Canada, excluding Newfoundland, unless otherwise stated.

[2]Refers to Upper Canada (Ontario) and Lower Canada (Quebec).

[3]Refers to Upper Canada, Lower Canada and Nova Scotia.

[4]Refers to Ontario, Quebec, Nova Scotia and New Brunswick.

[5]Includes Newfoundland.

[6]2 percent illegitimacy assumed until 1921.

Sources: Data on births were taken from the estimations performed in Chapter II and Vital Statistics, 1971 (Births, tables 5 and 11). Data on total population, male and female population, and females aged 15-49 were taken from the following census statistics. Censuses of Canada: 1851 (v. 1, appendices 5 and 6); 1861 (v. 1, General Abstract of Ages; 1871 (v. 2, table 7); 1921 (v. 2, table 9); 1971 (cat. 92-715, table 7). Data on marital status were extracted from the following Censuses of Canada: 1851 (v. 1, appendices 5 and 6); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 8); 1881 (v. 4, table G); 1891 (v. 4, table H); 1921 (v. 2, table 29); 1931 (v. 3, table 13); 1941 (v. 3, table 7); 1951 (v. 2, table 2); 1961 (cat. 92-552, table 78); 1971 (cat. 92-730, table 1).

after World War II, affected the crude birth rate, via the general fertility rate, without directly influencing the marital fertility rate. The pattern of change in non-marital fertility was one of relative constancy until 1931 when the rate began to steadily increase.[1] The trend in non-marital fertility was unique, not paralleling the trend in any of the other factors affecting overall fertility.

In order to measure the "pure" effect of each of the above components on fertility level, a series of standardized rates was constructed. The object of the standarization procedure is to determine what part of the observed change in overall fertility results solely from change in each component. For both expressions (1) and (2), only one term in the equation is allowed to take on its realized or observed value, while the other terms are held constant at their 1851 value, resulting in a hypothetical rate which reflects only the effect of the variable that is allowed to vary. Each term in the equation is treated in this fashion, thereby parcelling out the observed changes in fertility to the constituent parts.[2]

Tables XXIII (a) and XXIII (b) present the standardized rates. Looking first at the hypothetical or standardized crude birth rates, it can be seen that the effects of sex ratio and age distribution changes were very minor, with a slight tendency operating to inflate overall fertility level and, therefore, to a very small degree,

Table XXIII (a)

Standardized Crude Birth Rates
Canada,[1] 1851-1971

Year	Allowed to Vary Only: B/F*	F*/F	F/T
1851[2]	46.8	46.8	46.8
1861[3]	40.7	47.9	47.0
1871[4]	37.3	48.3	47.7
1881	32.7	49.7	47.7
1891	29.8	51.3	46.5
1901	30.2	50.7	47.1
1911	29.5	51.1	45.4
1921	29.1	50.4	46.8
1931	22.6	51.5	46.6
1941	20.2	52.8	47.1
1951[5]	25.0	50.1	47.7
1961[5]	25.6	46.9	47.8
1971[5]	15.6	49.1	48.3

Table XXIII (b)

Standardized General Fertility Rates
Canada,[1] 1851-1971

Year	Allowed to Vary Only: LB/M*	M*/F*[6]	IB/UM*
1851[2]	206.5	206.5	206.5
1861[3]	197.0	188.9	205.6
1871[4]	180.8	189.5	205.4
1881	161.1	187.0	205.0
1891	147.9	186.0	204.7
1901	-	-	-
1911	133.4	203.7	205.0
1921	125.0	213.9	205.4

Table XXIII (b), Continued

Year	Allowed to Vary Only: LB/M*	M*/F*[6]	IB/UM*
1931	101.0	204.8	205.8
1941	89.7	206.5	205.9
1951[5]	95.0	239.1	207.8
1961[5]	91.8	251.3	209.7
1971[5]	58.2	236.9	210.2

[1]Refers to present area of Canada, excluding Newfoundland, unless otherwise stated.

[2]Refers to Upper Canada (Ontario) and Lower Canada (Quebec).

[3]Refers to Upper Canada, Lower Canada and Nova Scotia.

[4]Refers to Ontario, Quebec, Nova Scotia and New Brunswick.

[5]Includes Newfoundland.

[6]Is equivalent to allowing UM*/F* to vary as UM*/F* equals 1 - (M*/F*).

Source: Table XXII.

hamper the process of fertility decline. In other words, if the age-sex composition of Canada had remained at its 1851 level, the crude birth rate in Canada in subsequent years would have been a little lower, for example, 15.6 in 1971 instead of the observed 16.8. The overwhelmingly important component in expression (1) was the general fertility rate, the pure effect of which was to lower the Canadian crude birth rate by over 31 points during the period under consideration.

The standardized general fertility rates, as

presented in Table XXIII (b) reveal the important role that declines in marital fertility played in Canadian fertility reduction. Keeping the proportion of females married (and, thus, unmarried, as well) and non-marital fertility constant at 1851 levels, it can be seen that the effect of marital fertility decline was substantial and relatively steady. The fluctuations characteristic of the crude birth rate and the general fertility rate are not embodied in the hypothetical marital fertility rates. If change in marital fertility had been the sole factor at work, Canadian societal fertility would not have exhibited the uneven trend that it did.

In contrast with the steady, declining effect of marital fertility, changes in Canadian nuptiality were uneven, having an overall inflationary effect. As shown in Table XXIII (b), the pure effect of changing marriage patterns was to raise the general fertility rate by over 30 points. Also, the direction of the effect varied over time. In the latter half of the nineteenth Century, the effect of nuptiality change was to lower general fertility whereas in more recent times, particularly in the years following World War II, the effect was in the opposite direction, to raise general fertility.

These hypothetical general fertility rates illustrate two important facts concerning Canadian fertility decline. One, the effect of declining marital fertility far

outweighed the effect of changing nuptiality in terms of the extent of overall fertility change. The fact that overall fertility declined as much as it did attests to the importance of declining marital fertility over and above the effect of generally increasing nuptiality. Two, much of the unevenness exhibited by the Canadian societal fertility trend can be attributed to the effects of a fluctuating nuptiality variable.

This compositional analysis can shed some light on the nature of fertility change within the outlined four stages. It will be recalled that the first stage, from 1851 to 1891, was one of major decline in fertility, as measured by both the crude birth rate and the general fertility rate. None of the decline was due to changes in age-sex distributional factors; as Table XXIII (a) shows, the effect of the female age composition variable, to increase fertility, was greater than the slight decreasing effect of the sex ratio variable. The declines experienced in this period were the result of the combined effects of declining marital fertility and declining female nuptiality. Although the effect of decreasing marital fertility outweighed the effect of decreasing nuptiality for the period as a whole, the important fact to note is that the two variables were operating together, reinforcing one another in the determination of major fertility decline.

The effect of the nuptiality factor was particularly

strong in the first decade of the period, 1851-1861, surpassing the effect of marital fertility decline. In that decade, the pure effect of marital fertility decline on the general fertility rate was less than 5 percent whereas the pure effect of nuptiality decline approached 9 percent. This fact is a consequential one in terms of the issue of the onset of decline. If one assumes a 10 percent decline in "fertility" as indicative of the commencement of transition, it matters very much what measure of fertility is utilized. As discussed earlier, the decade 1851-1861 witnessed a decline in excess of 10 percent in both the crude birth rate and the general fertility rate. That decline was only partially due to limitation of marital fertility and was, in large part, the result of a rather substantial decline in proportion of the female population married.

This fact puts into question the interpretation of fertility decline. Often, a decline in overall fertility in excess of 10 percent is taken as "meaning" that fertility behaviour is moving within the realm of deliberate and conscious control. Underlying such an interpretation is one of two assumptions: that the magnitude of overall fertility decline reflects the magnitude of marital fertility decline; or that decreases in nuptiality reflect a deliberate effort to limit family size at the level of the individual. The first assumption is clearly invalid in the

Canadian case, as the decline in general fertility exceeded the decline in marital fertility in this early decade. The second assumption is a more difficult one to deal with given the constraints of secondary data. On the one hand, it has been argued that lowered nuptiality is a mechanism consciously used by individuals in an attempt to curtail family size (Drake, 1972). Others, however, have suggested that the decision to postpone marriage stems from a different set of motivations than the decision to control family size within marriage, although the effects on overall fertility level may be similar (Coale, 1969:7; van de Walle, 1972:149). Support for this proposition lies in the age pattern of fertility change that is commonly detected within populations at the early stages of fertility transition. Within a population beginning voluntary birth control, the initiating segment is couples in which the woman is in the later years of childbearing and of high parity. In other words, attempts to limit family size are made late in married life. The second argument appears to be more plausible in the Canadian case. Although data concerning age-specific fertility are lacking for this early period, other data are supportive of the argument made by Coale and van de Walle. If nuptiality and marital fertility behaviour reflected the same underlying set of motivations, one would expect that the respective trends would bear a constant relationship to one another,

although not necessarily a positive one, in the statistical sense. However, in this first fertility stage, no such parallelism existed. While the effect of marital fertility decline was relatively even throughout the period, the effect of nuptiality was marked in the first decade of the period and minor after that.

Therefore, the decline in overall fertility occurring within the decade 1851-1861 should be interpreted with caution, as it resulted from the joint effects of two variables, only one of which may be interpreted as indicating deliberate fertility control. Taking decline in marital fertility as a more valid indicator of the onset of the deliberate attempt to control family size, 1871 may be identified as the threshold year in terms of timing of decline in Canada, as it was then that decline from the 1851 level exceeded 10 percent.

The fact that nuptiality and marital fertility operated jointly, affecting overall fertility decline, helps to explain the large reduction experienced in the first stage of fertility. The response to initial industrialization and urbanization was two-fold, thus creating a decline larger than if only one mechanism had been at work. Viewed in this light, major fertility decline in the face of only emergent social change, seems less anomalous.

In the second period of fertility in Canada, from 1891 to 1921, a very different pattern emerged in terms of

the relative contribution of the components of overall fertility. It will be remembered that this period was one in which little change was registered in crude birth and general fertility rates. Analysis of the constituent elements warns against the inference that this period was one of demographic stability. As Table XXIII (b) reveals, this period witnessed a continuation of the trend of declining marital fertility, such that the pure effect of marital fertility change upon the general fertility rate was an approximate 15 percent reduction from the 1891 level. This effect was matched by a 15 percent nuptiality effect, but in the opposite direction, that of increase. In other words, the two factors worked to cancel one another out and, thus, created a 30 year period with the appearance of constancy, but only the appearance. Whereas in the first period marital fertility and nuptiality changes operated together to jointly lower overall fertility level, with marital fertility reductions exerting the stronger influence, in the second period the two variables exercised an approximately equal influence, but in opposing directions.[3]

The effect of the age-sex compositional variables on the crude birth rate was again small in absolute terms. However, in relative terms, the variable of female age composition exerted a declining effect that was greater than the very slight declining effect of general fertility rate

upon the crude birth rate.

Therefore, the analysis of components in the second stage of fertility reveals a steady decline in marital fertility, as is expected given the substantial growth in industry and continued urbanization that occurred between 1891 and 1921. As Canada was transformed into an urban, industrial society, fertility within marriage exhibited a continued, downward trend, in response to new social forces. However, that trend was nullified by an increase in the proportion of married females aged 15-49. One is forced to ask why female nuptiality registered such increases during this period, a development quite unlike that experienced in western European populations. It is suggested that the answer lies in the composition of the immigrants entering Canada in the early decades of the twentieth Century. As discussed previously, this in-migration was dominated by persons of origins other than western European. It has been found that the historical marriage pattern in western Europe differed from that in the non-western parts of Europe, with the latter characterized by much higher proportions married, especially in the case of women (Hajnal, 1965). Thus, the large-scale in-migration of persons from areas of Europe typified by high proportions married could account for the increase registered in female nuptiality. In this view, then, no internally generated factors operated to raise female nuptiality.

The third stage of fertility change, from 1921 to 1961 was, as noted previously, a period of rather large fluctuation in overall fertility level, although the general trend was downward with the 1961 crude birth rate, for example, about 5 points lower than the 1921 level. Declines in marital fertility were solely responsible for the downward trend of general fertility, as revealed in Table XXIII (b). However, the entire period did not experience declining marital fertility; there was an upswing in 1951 which partially accounts for the lack of constancy within the period. Nevertheless, the pure effect of marital fertility in this period was to lower general fertility 26.5 percent from the standardized 1921 level, an influence almost as strong as that occurring during the first period of fertility change in Canada. Yet, the net effect was considerably smaller in the third period, due to the fact that other variables operated together to inhibit the downward trend. Of particular importance was the nuptiality variable which exerted an influence the pure effect of which was to increase general fertility 17.5 percent over the 1921 level. The effect of nuptiality increase between 1941 and 1951, coupled with a concomitant, although comparatively smaller, increase in marital fertility, explains the high overall fertility level experienced by Canada in the years following World War II. The positive i.e., inflationary, influence of nuptiality continued operating in 1961 to such

an extent that it negated the influence of declining marital fertility and, thus, created a general fertility rate in 1961 that exceeded the 1951 level.

The variable of non-marital fertility also exercised a positive effect upon overall fertility during this period. Increases in illegitimacy operated to raise general fertility approximately 2 percent over the standardized 1921 level, as indicated in Table XXIII (b). The influence of the sex ratio variable was similar to the non-marital fertility variable, a small effect in the upward direction, as seen in Table XXIII (a). However, the female age composition variable was more significant and in the opposite direction, downward. The major, downward change in the female age variable occurred between 1951 and 1961, probably reflecting the fact that a proportionately smaller cohort of women were entering the childbearing years during the decade of the 50s as a result of the low fertility of the depression years. The variable of female age composition operated in conjunction with the variable of marital fertility to affect the overall decline experienced in the period, whereas the other three factors, nuptiality, non-marital fertility, and the sex ratio variable acted jointly to dampen the downward trend.

Thus, the third stage witnessed a continuation in the trend of declining marital fertility. The one interruption in the trend of decline, the increase occurring

between 1941 and 1951, may be interpreted, in part, as the result of a "making up" of births postponed by the war. Increasing nuptiality operated to nullify the trend of decrease in marital fertility, as in the second stage of fertility. However, whereas Canada was unique in experiencing increases in female nuptiality in the early decades of the twentieth Century, the trend of increasing proportions married that occurred at mid-century was not a distinctively Canadian phenomenon. Rather, all western populations experienced a substantial rise in female nuptiality, particularly after World War II.

The last period of fertility change, and the shortest in time, the decade of the 60s, was one in which major declines in overall fertility were registered. General fertility rate underwent a decline approaching 40 percent and 30.7 percent of the total decline from 1851 to 1971 occurred within this period. Again, the major factor operating was marital fertility which depressed general fertility nearly 37 percent from the 1961 standardized level. In this period, the influence of declining marital fertility was reinforced by a lowering female nuptiality. Although the influence of nuptiality was small in comparison with that of marital fertility, the important point to note is that, like the first fertility stage and unlike the second and third stages, the two factors operated together to affect overall fertility decline.

Whereas nuptiality and marital fertility influenced general fertility in a downward direction, the other factors operated to inhibit fertility decline in the fourth stage of fertility. Both the demographic factors, and particularly the female age composition variable, exerted an effect to raise general fertility. Similarly, the effect of non-marital fertility was inflationary. The effects of these three factors were small in comparison with the effects of marital fertility and nuptiality, working to negate the overall decline only slightly.

This compositional analysis has revealed the overwhelmingly important role that declines in marital fertility played in the overall trend of fertility change in Canada from 1851 to 1971. Not only did this variable play the largest role in affecting fertility decline, but the most consistent one as well. In all four stages of fertility, the influence of marital fertility was negative or fertility-inhibiting. In contrast, the role of female nuptiality, the second most influential variable in terms of overall fertility change, was markedly inconsistent, although the overall effect was positive or fertility-enhancing. In the first and fourth periods of fertility, the effect of female nuptiality on general fertility was negative, reinforcing the effect of marital fertility, whereas in the two middle periods, the influence of female nuptiality was positive, serving to negate, to some degree,

the influence of the marital fertility factor. This negating influence was particularly strong in the second period and was responsible for the observed plateau in fertility level. Therefore, the effect of changes in female nuptiality was two-fold: it hampered declines in fertility and it worked to create an unevenness in the trend of overall fertility in Canada. The influence of the remaining three variables, the sex ratio factor, the female age composition factor and the non-marital fertility factor, was small for the entire period under consideration and for each fertility period as well. The overall effect of all three factors was positive, although some within-period variation existed. Although the overall effect of all variables except the marital fertility variable was positive, the observed crude birth rate declined 30 points between 1851 and 1971. The standardized crude birth rate, allowing only general fertility rate to vary, declined 31.2 points over the same period. The actual general fertility rate decreased 137.9 points; the standardized general fertility rate, allowing only marital fertility to assume its realized value, declined 148.3 points. Thus, the observed 1971 rates were only slightly higher than they would have been had the fertility-enhancing factors not been operative, thereby illustrating the extreme importance of the one consistently operating fertility-dampening factor, marital fertility.

That reductions in marital fertility played the largest role in affecting fertility decline in Canada is in keeping with the experience of western populations. Similarly, the increase in female nuptiality after World War II, which operated to inflate overall fertility, was a development common to western populations.

The uniqueness of the Canadian fertility transition, relative to that of western Europe, lies in the high levels of fertility at commencement of decline, the magnitude of early decline, and the unevenness in the trend of decline.

Canada, in 1851, registered a crude birth rate in excess of 45 births per 1000 population. As such, Canadian fertility was higher than fertility in western European societies at mid-century, which registered levels of the crude birth rate ranging in the middle 30s (Mitchell, 1975). However, a crude birth rate higher than 40 was not atypical of European overseas populations at the middle of the nineteenth Century. In 1861-65, the Australian crude birth rate was 42.4 (Spencer, 1971:249) and in 1850, the crude birth rate in the United States was 43.3 (Thompson and Whelpton, 1933:263). These higher levels in the European overseas societies were the result of higher levels of marital fertility and heightened female nuptiality. Also, the age structure was amenable to higher birth rates in the overseas populations as the age-selectivity involved in migration results in higher proportions in the childbearing

ages.

Canada witnessed substantial early declines in fertility; the birth rate declined approximately 31 percent between 1851 and 1891. The overseas populations of Australia and the United States registered comparable declines over this period.[4] However, western European societies did not witness reductions of this magnitude.[5] This differential in the extent of nineteenth Century fertility decline can be accounted for by the operation of the nuptiality variable. Whereas the level of female nuptiality remained relatively constant in western Europe, the proportion of married females dropped in Canada and in Australia and New Zealand,[6] reinforcing the trend of overall decline (Jones, 1971:309).

The trend of Canadian fertility departed from that in both western Europe and the other overseas societies in its unevenness after decline commenced. The plateau in fertility characteristic of the second stage, from 1891 to 1921, was a phenomenon unique to Canadian transition. All other western populations registered declines in birth rate at this time, with percent reductions typically in excess of 15 percent,[7] due, in large part, to decreases in marital fertility. Although Canada similarly experienced declining marital fertility, its effect was counterbalanced by a comparable increase in female nuptiality. It has been suggested that this increase was not internally generated,

but rather resulted from the changed characteristics of the immigrants entering Canada during this period.

Provincial Variations in Fertility

Table XXIV presents crude birth rates for the provinces of Canada for the period under consideration, within the constraints of data availability. As can be seen at a glance, considerable variation existed among the Canadian provinces in terms of fertility level and trend. Quebec stood out as the high fertility province until the middle of the twentieth Century at which time Newfoundland took over that role. At the other extreme, British Columbia was characterized by the lowest provincial crude birth rates until 1971 when Quebec, the previous high birth rate province, exhibited the lowest rate in Canada.

The fact that one province can move from the position of highest rank to the position of lowest rank in crude birth rate is suggestive of differential trends in birth rate decline. Unfortunately, complete data are not available at the provincial level to allow for a complete analysis of differential trends, mainly due to a lack of early data for the western provinces. Therefore, the initial comments are limited to the provinces from Ontario eastward, excluding Newfoundland.

Focussing first on the provinces of Ontario and Quebec, the two provinces for which complete data are

Table XXIV

Provincial Crude Birth Rates. 1851-1971

Province	Year 1851	1861	1871	1881	1891	1901	1911	1921	1931	1941	1951	1961	1971
Newfoundland	-	-	-	-	-	-	-	-	-	-	32.5	34.1	24.5
Prince Edward Island	-	-	-	34.0	30.9	27.0	25.1	26.7	22.7	22.2	26.9	27.1	18.8
Nova Scotia	-	39.1	37.3	32.6	30.3	29.5	28.3	27.3	24.1	24.8	26.7	26.3	18.1
New Brunswick	-	-	38.4	33.9	32.2	30.9	30.5	32.5	28.1	27.7	31.2	27.7	19.2
Province of Quebec[1]	46.0	40.6	39.9	39.0	36.5	36.9	34.8	37.6	30.9	27.6	29.8	26.1	14.8
Ontario	47.7	43.1	39.3	33.5	28.8	27.0	26.2	27.8	21.5	19.7	25.0	25.3	16.9
Manitoba	-	-	-	-	-	-	-	33.3	21.8	20.9	25.7	25.3	18.2
Saskatchewan	-	-	-	-	-	-	-	32.6	24.6	21.2	26.1	25.9	17.3
Alberta	-	-	-	-	-	-	-	30.9	25.1	22.4	28.7	29.2	18.8
British Columbia	-	-	-	-	-	-	-	22.3	15.9	19.0	24.1	23.7	16.0

[1]1921 data on births taken from Henripin (1972:372).

Sources: Data on births were taken from the estimations performed in Chapter II and Vital Statistics, 1971 (Births, table 5). Data on total population and females aged 15-49 were taken from the following census statistics. Censuses of Canada: 1851 (v. 1, appendices 5 and 6, table 4); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 7); 1921 (v. 2, table 9), 1971 (cat. 92-715, table 7).

available from 1851 onwards, it can be seen that the overall extent of decline in crude birth rate was substantial and quite similar in magnitude. As shown in Table XXIV, the crude birth rate declined from 46.0 to 14.8, or 67.8 percent, in Quebec and from 47.7 to 16.9, or 64.6 percent, in Ontario. Despite such similarity in extent of decline, the path of decline was markedly different in the two provinces. Ontario, initially experiencing crude birth rates higher than Quebec, underwent a more rapid initial decline such that in 1871 the rates in the two provinces were approximately equal but by 1891 the Ontario rate was nearly 7 points lower. In other words, in the first period of fertility, Ontario experienced a greater decline than did Quebec, 39.6 percent as compared to 20.7 percent. In the second period, both provinces experienced the plateau that was characteristic of Canada as a whole.

It was in the third period that the two provinces diverged significantly in terms of crude birth rate trend. During this period, the rate in Quebec dropped dramatically, over 30 percent from the 1921 level, while in Ontario the decline was much smaller, 9 percent. Much of this differential can be accounted for in the latter decades of the period. Ontario exhibited a much larger upswing in crude birth rate between 1941 and 1951, when the rate jumped from 19.7 to 25.0, or nearly 27 percent. The analogous increase in Quebec was 8 percent. Also, in

Ontario the upswing continued on until 1961 whereas, in Quebec, a downward trend occurred between 1951 and 1961. As a result the crude birth rates in the two provinces were within one point of one another in 1961 but, in Quebec, the 1961 rate was 11.5 points lower than the 1921 rate while, in Ontario, it was only 2.5 points lower. In the decade 1961-1971, both provinces experienced a large decline in crude birth rate, although the decline was greater in Quebec.

The differential pattern of fertility decline in the two provinces can be summarized by estimating the contribution made during each period to the total decline experienced. These estimates were constructed by subtracting the percent reduction occurring up to but not including a given period from the percent reduction occurring in that period and all preceding periods and by treating the total reduction in each province as 100 percent. As shown in Table XXV, Quebec and Ontario exhibited very different patterns of decline. In the case of Ontario, decline was concentrated in the first and fourth stages of fertility, with the largest contribution made during the first period. As such, the pattern in Ontario paralleled that of Canada as a whole. On the other hand, in Quebec, the pattern was one in which decline was concentrated in the third and fourth periods. Although the two provinces shared the feature of a significant contribution made in the decade of the 60s, the fourth period, they diverged in terms of the

Table XXV

Percent of Total Decline in Crude Birth Rate Occurring in Specified Periods. Ontario, Quebec, Nova Scotia and New Brunswick

Province	Percent of Decline Occurring in: 1851-1891[1]	1891-1921	1921-1961	1961-1971
Ontario	61.3	3.3	8.2	27.2
Province of Quebec	30.5	+3.5	36.9	36.1
Nova Scotia	41.9	14.3	4.7	39.1
New Brunswick	32.2	+1.4	25.0	44.2

[1]1861-1891 for Nova Scotia; 1871-1891 for New Brunswick.

Source: Table XXIV.

timing of earlier declines, with Quebec lagging behind in this regard.

By 1861 and 1871, data are available for Nova Scotia and New Brunswick, respectively. If these two provinces can be taken as representative of the Maritime provinces, it is possible to estimate the Maritime pattern of fertility decline and compare it with the patterns found in Ontario and Quebec, using the same estimation procedure. As is revealed in Table XXV, the two Maritime provinces experienced a pattern of decline in crude birth rate similar to that of the province of Ontario, with major contributions made in the latter years of the nineteenth Century and in the decade of the 1960s. However, New Brunswick, a province geographically contiguous to Quebec and with a significant

French Canadian population, did exhibit a pattern of decline more similar to the Quebec pattern, with a fairly significant contribution made during the third period.

Looking at the period from 1921 onwards, for which complete provincial data exist with the exception of Newfoundland, rather large differentials existed, both in terms of magnitude of crude birth rate and pattern of decline. In terms of magnitude, in 1921, a 15.3 point spread existed between the Quebec rate of 37.6 and the British Columbia rate of 22.3, a difference of 68.6 percent. In 1971, provincial variation remained, with nearly 10 points, or 65.5 percent, spanning the difference between the province exhibiting the highest rate, Newfoundland, and the province with the lowest, Quebec. However, if Newfoundland is excluded, provincial variation in 1971 was only 29.7 percent.

In terms of the patterning of decline, again significant provincial differentials emerged, particularly in the period from 1921 to 1961. During that period, provincial variation spanned from a percent decrease, from 1921 levels, of 30.6 in Quebec to a percent increase of 6.3 in British Columbia. On the average, the eastern provinces registered greater declines than the western provinces.

A relationship emerges between the extent of change in crude birth rate during the period 1921-1961 and the level of crude birth rate in 1921. If the provinces are

placed in rank order in terms of 1921 crude birth rate, from highest to lowest, that ordering parallels, with one minor exception, the ranking of the provinces in terms of extent of decline in crude birth rate from 1921 to 1961, from greatest decline to least, or in this case, increase. As shown in Table XXVI, the higher the crude birth rate in 1921, the larger the decline from 1921 to 1961. It may be said that this period was one of provincial convergence in crude birth rate.

Table XXVI

Relationship between Value of Crude Birth Rate in 1921 and Extent of Change between 1921 and 1961. Canadian Provinces

Province	Crude Birth Rate, 1921	Change, 1921 - 1961	
		Point	Percent
Province of Quebec	37.6	-11.5	-30.6
Manitoba	33.3	-8.0	-24.0
Saskatchewan	32.6	-6.7	-20.5
New Brunswick	32.5	-4.8	-14.8
Alberta	30.9	-1.7	-5.5
Ontario	27.8	-2.5	-8.9
Nova Scotia	27.3	-1.0	-3.7
Prince Edward Island	26.7	+0.4	+1.5
British Columbia	22.3	+1.4	+6.3

Source: Table XXIV.

The period from 1961 to 1971 was one of major decline for all Canadian provinces. Each province experienced a decline in excess of 28 percent from the 1961 level and, in the case of Quebec, the decline exceeded 43 percent. As a result, by 1971, provincial crude birth rates were well below 20, with the exception of Newfoundland.

Components of Provincial Fertility

As stated previously, the crude birth rate is a function of general fertility rate, sex ratio, and female age composition and the general fertility rate is, in turn, a function of marital fertility, non-marital fertility and female nuptiality. Appendix B presents data on the observed levels of these factors in each Canadian province for the years that data are available.

The observed provincial trends and differentials in pattern of decline in general fertility rate parallel that of the crude birth rate. All provinces underwent significant decline in level of general fertility rate so that by 1971, the level was less than 100 in all provinces except Newfoundland, where the level slightly exceeded 100. Although the overall pattern was one of decline, the path of decline was far from smooth, with all provinces registering an upswing after 1941 and certain provinces, i.e., Quebec, New Brunswick and Ontario, undergoing slight increases in the decade 1911-1921. All provinces, with minor exceptions,

followed the overall trend in general fertility rate that was characteristic of the Canadian average data: declines in the first fertility stage, a levelling in the second period, a fluctuating third period and major declines occurring in the fourth period.

Despite this overall commonality in provincial trend of general fertility, two facts are noteworthy. One concerns the net effect of fertility change in the third period of fertility. The overall change in the general fertility rate in Canada from 1921 to 1961 was a percent decrease of approximately 12 percent, an average which masks considerable provincial variation in the trend of the general fertility rate in this period. Provincial variation ranged from a percent increase of almost 15 percent in Prince Edward Island to a percent decrease of nearly 30 percent in Quebec. Again, as with the crude birth rate, this differential pattern of decline was related to level of fertility in 1921. The four provinces experiencing the lowest values of general fertility rate in 1921, i.e., Prince Edward Island, Nova Scotia, Ontario and British Columbia, were the only provinces registering an increase in general fertility rate over the third period. Similarly, Quebec, with the highest value of the general fertility rate in 1921 experienced the largest degree of decline from 1921 to 1961. Therefore, the third period is perhaps best characterized as one of fluctuation in trend

but convergence in provincial differentials of general fertility.

Second, in the first two stages, prior to the provincial convergence of the third stage, rather strong provincial differentials in general fertility rate existed, particularly in the second stage. In 1891, at the end of the first stage, there existed a 40 point spread in level of general fertility rate among the five provinces for which data are available. By 1921, that range had expanded to an approximate 62 points spanning the level experienced by British Columbia, 92.5, and Quebec, 154.9. If one restricts the analysis to only those five provinces for which available data existed in 1891, the range in provincial levels of general fertility rate is approximately 47 points. Although such a restriction lowers the range of variability experienced, the major point remains. Provincial variation was rather large and somewhat larger in the period from 1891 to 1921 than in the period spanning the latter years of the nineteenth Century. In contrast with provincial variations in the range of 40-47 or 40-62, depending upon which provinces are considered, by 1961, the range had narrowed to approximately 30 points, with Prince Edward Island experiencing the highest rate, 134.6, and British Columbia the lowest, 104.1.[8] Again, if only the original five provinces are considered, the 1961 range was about 26 points, from the Prince Edward Island high to the Ontario

low of 108.3. This pattern of convergence remained in 1971, when the range was again around 30 points.

The trend of marital fertility was one of a more steady decline than that of the general fertility rate. It will be recalled that the Canadian data indicated a sustained decline in marital fertility throughout the whole period under consideration, except for an increase in the decade from 1941 to 1951. All provinces experienced this overall trend of declining marital fertility, although certain provincial differentials existed in terms of level and pattern of decline.

In terms of level, provincial differentials were quite small in the first stage of fertility, particularly in the earlier part. For example, in 1871, in the four provinces for which data are available, the range in marital fertility rate was approximately 13 points, between Ontario (305.9) and Quebec (318.9). By 1891, the range had widened to approximately 72 points, with Prince Edward Island experiencing the highest marital fertility rate, 293.2, and Ontario, the lowest, 221.1. If Prince Edward Island is excluded, and the comparison is limited to the same four provinces as in 1871, the gap in 1891 narrows slightly to about 62 points.

The second stage witnessed a continuation of this widening of provincial differentials in level of marital fertility rate. If all provinces are considered, the range

was approximately 146 points between Quebec, on the one hand, and British Columbia, on the other. Restricting the comparison to the five provinces considered in 1891, the range was about 102 points. Either way, the point remains that during the second period of fertility there occurred a widening in provincial differentials in marital fertility rate. In contrast, the third period of fertility signalled a trend toward convergence. Excluding Newfoundland, the range of provincial values was approximately 62 points. Considering only the original five provinces, the range was somewhat smaller, about 52 points. In the fourth stage of fertility, the trend of convergence continued.

As well as provincial differentials in level of marital fertility rate, there existed provincial differentials in terms of the pattern of marital fertility change. If no such differentials existed, we would expect all provinces to exhibit a continual decline in marital fertility rate with the exception of the decade 1941-1951. However, some provincial deviation from this main Canadian trend did occur. The first definite[9] evidence of deviation occurred in the decade 1911-1921, at which time the provinces of Quebec and New Brunswick experienced increases in marital fertility rate. The increase was particularly large in the case of Quebec, where the marital fertility rate rose 14.2 points or 5.3 percent. As a result, Quebec was the only province that did not undergo an overall

decrease in marital fertility during the second period of fertility, 1891-1921.

The second instance of provincial variation in the pattern of fertility change occurred in the decade 1941-1951 when the Canadian data exhibited a clear-cut trend of increase in marital fertility rate, from a level of 151.0 in 1941 to a level of 160.3 in 1951, an increase of just over 6 percent. Against this background of general increase, two provinces experienced decreases in marital fertility rate, Quebec and Nova Scotia. The decrease was slightly larger in the province of Quebec, 5.4 percent as compared to a 3.7 percent decrease in Nova Scotia. As a result of decrease in the decade 1941-1951, by 1951 Quebec was no longer the province of highest marital fertility, a position which she had assumed since around the turn of the century.[10]

The decade 1951-1961 was also a period of provincial divergence in trend. In this period, the overall trend in Canada was one of slight decline in marital fertility rate. The level of marital fertility rate decreased from the 1951 level of 160.3 to a level of 154.7 in 1961, a percent decrease of 3.5. It will be noted that this decrease did not match the increase experienced in the prior decade, so the Canadian marital fertility rate in 1961 continued to be higher than in 1941. Although the overall trend in 1951-1961 was one of decrease, the provincial data indicated both upward and downward movement. In fact, only

two provinces experienced declines in marital fertility rate, Quebec and New Brunswick. The remaining eight provinces exhibited increases in marital fertility. Thus, large declines in two provinces, 13.5 percent in Quebec and 7.2 percent in New Brunswick, outweighed smaller increases in eight provinces and created the overall trend of decline in this decade. If Canada had not contained the provinces of Quebec and New Brunswick, the 1951 and 1961 marital fertility rates would have been 145.9 and 148.6, respectively. In other words, Canada would have experienced an approximate 2 percent increase in marital fertility rate rather than a percent decrease of 3.5 during the decade 1951-1961. However, in absolute terms, the levels of marital fertility rate in 1951 and 1961 would have been lower than the recorded levels, given the exclusion of New Brunswick and Quebec. In other words, it was two relatively high fertility provinces that registered declines in the decade 1951-1961.

The above finding is suggestive of a possible relationship between direction of change in marital fertility rate and level of marital fertility rate. Considering the entire period of 1941-1961, there is evidence of such a relationship. In 1941, the four eastern provinces of Prince Edward Island, Nova Scotia, New Brunswick, and Quebec experienced levels of marital fertility higher than the Canadian average of 151.0. Three

of these provinces, Nova Scotia, New Brunswick, and Quebec, underwent overall decline in marital fertility rate from 1941 to 1961 although only Quebec experienced declines in both internal decades. On the other hand, all provinces to the west of Quebec were characterized by 1941 levels of marital fertility lower than the Canadian average and all experienced a percent increase in marital fertility from 1941-1961, generally in excess of 10 percent. In this group of five western provinces, there was no exception to the trend of 20 year increase and all five provinces exhibited increases in both internal decades, although the increases were larger in the earlier decade. Thus, there existed a relationship between level of marital fertility and pattern of change in marital fertility rate throughout the period 1941-1961;[11] a relationship which parallels an east-west geographical split and which helps explain the convergence in marital fertility rate that was experienced in the third stage of fertility.

The trend of the nuptiality variable, the proportion of females aged 15-49 that are married, was generally upward for the whole period under consideration, although the period from 1961 to 1971 witnessed some decrease. There existed, however, provincial differentials in terms of magnitude of level and extent of change in female nuptiality.

In terms of extent of the magnitude of provincial

differentials in female nuptiality, one fact stands out clearly: an undeviating trend of provincial convergence in proportion married. In 1891,[12] .2330 points spanned the difference between the province experiencing the highest proportion married and the province experiencing the lowest; in 1921, the difference was .1812; in 1961, the difference had narrowed to .1262; and in 1971, further convergence occurred such that the difference was .0726.

Against this background of steady and marked convergence in extent of provincial variation in female nuptiality, there existed strong provincial differentials in level and extent of change. In the nineteenth Century, large provincial differentials in level of female nuptiality existed. In the western provinces, the proportion married was well in excess of .60 whereas in the eastern provinces, the proportions were generally around .50. The extent of change in the second and third stages was regionally based as well. The western provinces experienced slight increases in proportion married, whereas the eastern provinces witnessed large gains. For example, in the period from 1921 to 1961, the eastern provinces registered increases in the neighbourhood of 20 percent, with the increases in Prince Edward Island and Ontario approaching 30 percent. On the other hand, no western province experienced an increase in excess of 15 percent; Manitoba, with an increase of 12.8 percent, witnessed the

largest increase.

The existence of provincial convergence in magnitude of female nuptiality level in conjunction with large differences in pattern of change is suggestive of a relationship between level and magnitude of change. The provinces experiencing initially high levels of proportion married, i.e., the provinces west of Ontario, underwent fairly small changes in nuptiality whereas the provinces characterized by lower levels of female nuptiality in the earlier years underwent more substantial changes in this variable. This inverse relationship between level and extent of change explains the steady and marked trend of provincial convergence in the female marriage variable.

It will be noted that the direction of the relationship between level and extent of change in marital fertility is opposite to that between level and extent of change in female nuptiality. In terms of marital fertility, for the period from 1921 to 1961, the provinces experiencing the highest initial levels underwent more significant declines than the provinces experiencing low initial levels.[13] In contrast, in terms of female nuptiality, the provinces witnessing the highest initial levels underwent smaller changes than did the other provinces.

This fact sheds some light on the internal workings of the previously mentioned provincial convergence in general fertility in the period from 1921 to 1961. In both

1921 and 1961, east-west differentials in general fertility rate were slight. The mean general fertility rate in 1921 in the eastern provinces was 126.9 and, in the western provinces, 128.3. Similarly, in 1961, the difference was small; 119.8 in the east and 117.2 in the west. Underlying this regional similarity was a differential combination of marital fertility and female nuptiality, in terms of level and extent of change. In the eastern provinces, comparatively high levels of marital fertility combined with low levels of nuptiality in both 1921 and 1961. In the west, the reverse was the case. As already mentioned, the absolute level of each variable was related to extent of change, in opposite ways. Therefore, in the eastern provinces, considerably more change occurred in both variables between 1921 and 1961 than in the west. The eastern provinces underwent a 62.0 point decline in marital fertility rate and a .1278 point increase in the proportion married. In contrast, in the western provinces, marital fertility rate declined only 39.6 points and female proportion married increased only .0666 points. The marital fertility rate declines in the eastern provinces were largely "cancelled out" by large increases in female nuptiality, such that total decline in general fertility rate during the period was small, approximately 5 points. In the western provinces, on the other hand, marital fertility declines did not encounter this negating influence

to such a high degree. However, general fertility rate levels in 1961 did not exhibit significant east-west variation because of the continued higher levels of female nuptiality in the west, which operated to negate, in the absolute sense, the lower marital fertility of the west. If the western provinces had experienced the nuptiality level of the east, the general fertility rate there in 1961 would have been 109.9 rather than the actual level of 117.2. Thus, regional variation in general fertility rate would have been greater if regional similarity in female nuptiality had existed. Regional similarity in general fertility rate in 1921 was partially the result of an inverse relationship between level of marital fertility and level of nuptiality.

The third variable operating on the general fertility rate is the variable of non-marital fertility. The trend of this variable from 1921 onwards was upward. As with the variables discussed previously, provincial differentials in level and trend may be observed. However, no convergence in non-marital fertility between 1921 and 1961 was experienced. Rather, provincial variation in non-marital fertility expanded during this time period and was followed by a contraction in 1971. Part of the uniqueness in the pattern of change in non-marital fertility was due to one province, Quebec. While all other provinces experienced increases of over 150 percent in the period from 1921 to

1961, Quebec's rate of non-marital fertility in 1961 was only 19.2 percent higher than the 1921 rate.

Again, a regional, i.e., east-west, phenomenon may be observed in terms of extent of change, but it is unrelated with initial (1921) levels. In 1921, no regional difference existed in terms of mean level of non-marital fertility. In the western provinces, the mean rate was 6.2 and, in the eastern provinces, it was approximately 6 as well, whether Quebec is included or not. However, by 1961 a strong regional difference emerged, with the mean of the western provinces, 28.1, nearly 60 percent higher than the mean of the eastern provinces, 17.9. If Quebec is excluded, the difference remains substantial, approximately 45 percent. By 1971, the extent of the regional difference had subsided somewhat. The western provinces experienced levels of non-marital fertility 45 percent higher than the eastern provinces. Excluding Quebec, the difference is 33 percent. Therefore, the western provinces registered much more substantial gains in non-marital fertility than did the eastern provinces for the total period 1921-1971, a 23 point or 368 percent increase in the west compared to a 13.6 point or 206 percent increase in the east.

Component Analysis of Provincial Fertility

Given the fact of considerable provincial variation in level and extent of change of fertility and its

constituent parts, a component analysis was performed on the provincial level, a replication of the standardization procedure[14] that was performed on the Canadian data. Again, the aim was to determine what part of the observed change in overall fertility resulted solely from change in each component. The standardized, or hypothetical, rates are presented in Appendix C and a summary is provided in Tables XXVII (a) and (b).

Looking first at the standardized crude birth rates, it can be seen that, on the general level, changes in general fertility rate exercised a greater influence than change in the variables of female age composition and the sex ratio. Of these latter two variables, female age composition had the greater effect and in the two internal stages of fertility, 1891-1921 and 1921-1961, in most provinces, it exercised an influence almost equal to that of general fertility and in the same direction, negative or fertility-inhibiting. In the third stage of fertility, the negative influence of this variable was particularly strong. The effect was somewhat stronger in the four western provinces and, given the fact that the pure effect of general fertility was a little larger, in the negative direction as well, in the western provinces, one would expect that overall decline in the crude birth rate would be larger in the western provinces than in the eastern provinces. However, such was not the case: the change in

Table XXVII (a)

Percent Change in Standardized Crude Birth Rates, by Fertility Periods. Canadian Provinces

Fertility Period	Percent Change: Allowed to Vary Only: B/F*	F*/F	F/T
Newfoundland			
1961-1971	-33.42	+07.01	+00.85
Prince Edward Island			
1881-1891	-06.09	-03.17	-00.21
1891-1921	-09.22	-04.11	-00.63
1921-1961	+14.66	-10.92	-00.84
1961-1971	-34.75	+05.34	+01.48
1881-1971	-36.22	-12.87	-00.21
Nova Scotia			
1861-1891	-21.11	-01.21	-00.83
1891-1921	-07.39	-01.43	-00.84
1921-1961	+02.28	-06.24	+00.21
1961-1971	-33.83	+02.44	+01.05
1861-1971	-50.28	-06.48	-00.41
New Brunswick			
1871-1891	-16.76	+00.41	+00.21
1891-1921	+03.96	-03.05	+00.42
1921-1961	-06.98	-08.60	+00.21
1961-1971	-35.49	+06.65	+00.63
1871-1971	-48.08	-05.10	+01.48
Quebec			
1851-1891	-24.06	+03.66	+01.05
1891-1921	+02.03	+00.83	00.00
1921-1961	-29.91	-00.82	00.00
1961-1971	-46.75	+05.81	+00.62
1851-1971	-71.08	+09.68	+01.67

Table XXVII (a), Continued

Fertility Period	Percent Change: Allowed to Vary Only: B/F*	F*/F	F/T
Ontario			
1851-1891	-47.62	+11.23	+03.70
1891-1921	-03.56	-00.57	+00.21
1921-1961	+00.82	-09.96	+00.63
1961-1971	-36.99	+05.11	+00.62
1851-1971	-67.91	+04.66	+05.22
"West"			
1891-1921	-30.91	-04.91	+13.17
Manitoba			
1921-1961	-18.91	-09.59	+03.49
1961-1971	-30.04	+01.52	+01.68
1921-1971	-43.27	-08.22	+05.23
Saskatchewan			
1921-1961	-15.18	-11.52	+05.92
1961-1971	-37.54	+04.42	+02.15
1921-1971	-47.02	-07.61	+08.20
Alberta			
1921-1961	-05.54	-06.86	+07.37
1961-1971	-39.70	+04.00	+01.93
1921-1971	-43.00	-03.14	+09.45
British Columbia			
1921-1961	+12.40	-15.48	+11.27
1961-1971	-35.60	+03.66	+01.05
1921-1971	-27.62	-12.39	+12.44

Source: Appendix C.

Table XXVII (b)

Percent Change in Standardized General Fertility Rates, by Fertility Periods. Canadian Provinces

	Percent Change: Allowed to Vary Only:		
Fertility Period	LB/M*	M*/F*	IB/UM*
Newfoundland			
1961-1971	-33.76	-03.45	-01.70
Prince Edward Island			
1881-1891	-05.60	-00.22	-00.07
1891-1921	-22.91	+17.32	+00.20
1921-1961	-13.33	+28.14	+02.84
1961-1971	-31.46	-06.55	-00.06
1881-1971	-56.78	+40.17	+02.91
Nova Scotia			
1861-1891	-22.88	+02.81	-00.24
1891-1921	-20.36	+14.78	+00.64
1921-1961	-20.27	+23.36	+03.76
1961-1971	-32.30	-04.95	+00.70
1861-1971	-66.85	+38.37	+04.24
New Brunswick			
1871-1891	-15.07	-01.51	-00.24
1891-1921	-08.59	+13.53	+00.05
1921-1961	-22.82	+17.31	+02.45
1961-1971	-34.27	-04.97	+00.97
1871-1971	-60.61	+24.66	+03.25
Quebec			
1851-1891	-20.32	-04.19	-00.52
1891-1921	+00.07	+01.45	+00.50
1921-1961	-40.00	+16.80	+00.35
1961-1971	-45.74	-02.67	+00.27
1851-1971	-74.04	+10.50	+00.60

Table XXVII (b), Continued

Fertility Period	Percent Change: Allowed to Vary Only: LB/M*	M*/F*	IB/UM*
Ontario			
1851-1891	-37.22	-14.90	-01.22
1891-1921	-17.40	+16.74	+00.23
1921-1961	-21.10	+25.81	+01.86
1961-1971	-32.04	-07.44	-00.07
1851-1971	-72.19	+15.69	+00.78
"West"			
1891-1921	-34.34	+07.11	-00.78
Manitoba			
1921-1961	-30.06	+12.22	+03.30
1961-1971	-28.72	-06.59	+01.15
1921-1971	-50.15	+04.82	+04.48
Saskatchewan			
1921-1961	-24.96	+08.27	+05.19
1961-1971	-33.66	-11.38	+00.58
1921-1971	-50.21	-04.05	+05.80
Alberta			
1921-1961	-15.16	+06.83	+04.79
1961-1971	-36.48	-07.75	-00.37
1921-1971	-46.11	-01.45	+04.41
British Columbia			
1921-1961	-04.79	+11.26	+05.20
1961-1971	-32.19	-07.75	-00.47
1921-1971	-35.44	+02.64	+04.70

Source: Appendix C.

crude birth rate from 1921 to 1961 was slightly greater in the eastern provinces. This apparent anomaly can be explained by the differential operation of the sex ratio variable in the two regions of Canada. In the eastern provinces, the effect of the sex ratio variable during this period was virtually zero, whereas in the western provinces, the sex ratio variable exerted a larger effect, in the positive, or fertility-enhancing direction. In the western provinces during this period, the sex ratio was becoming more "normal," and the proportional increase in the female population worked in the direction of increasing the crude birth rate. Thus, in the west, the declining effect of general fertility and the female age composition variable were negated, to some degree, by the sex ratio variable.

One province, Quebec, stood out as unique during the third stage of fertility in terms of the effects of the three factors on the crude birth rate. The actual decline in the crude birth rate in Quebec was very large, more than double the Canadian average. This substantial decline was almost totally the result of declining general fertility, as the effect of the two "demographic" variables was virtually zero. If Quebec had, like her fellow eastern provinces, experienced a more substantial negative effect of female age composition, the actual change in crude birth rate would have been even larger than it was.

In the fourth stage of fertility, from 1961 to 1971,

general fertility operated solely to decrease the crude birth rate, as the effect of the two "demographic" variables was positive, although slight. In all provinces, both the sex ratio variable and the female age composition variable worked to inflate overall fertility somewhat, although the effect of the latter variable was slightly greater. Therefore, by the fourth stage, the sex ratio in the western provinces had normalized to such a degree that it no longer exercised a marked, positive effect on the crude birth rate. In fact, by this period, much of the east-west differential in all three factors had disappeared. The actual change in crude birth rate was a little greater in the eastern provinces, but if Newfoundland is excluded, the differential was very minor. The slightly larger decrease in crude birth rate in the eastern provinces was due to the combined effects of a larger decline in general fertility and a larger negative effect of the age composition variable.

In terms of the general fertility rate, it will be recalled that marital fertility exercised the greatest effect, but that its effect was, in some part, mediated by the nuptiality variable.

In the first stage of fertility, when declining marital fertility and decreasing proportions married operated together to affect a large decline in general fertility on the national level, significant provincial differentials existed in terms of the relative combination

of these factors. Although all provinces experienced declines in marital fertility, in only one province was there a corresponding, large decline in proportions married. The substantial effect of declining proportions married on the general fertility rate on the national level was due almost entirely to the work of the most populous province, Ontario. In Ontario, the effect of declining proportions married was to lower the general fertility rate approximately 32 points. In the other provinces, the pure effect was smaller and in Nova Scotia, from 1861 to 1891, the effect of the nuptiality variable was positive. Therefore, only in Ontario did declining marital fertility and substantially declining proportions married operate jointly to affect a decline in the general fertility rate. This finding strengthens the argument that the nineteenth Century Canadian demographic response to social and economic change was two-fold, as Ontario was the leading province in terms of industrial development.

In the second stage of fertility, observed Canadian general fertility underwent a decline, although small in magnitude compared to the decline experienced in the first stage. In all provinces, except Quebec, marital fertility declined over this period. Similarly, in all provinces, increases in proportions married were registered. In most provinces, these two variables exerted an approximately equal effect, thus accounting for relative constancy in the

observed general fertility rates. Although the combined effects were equivalent, the relative change registered differed widely by province. For example, in Ontario, a pure effect of declining marital fertility of approximately 17 percent was matched by increasing proportions married which exerted a pure effect of approximately 17 percent as well. On the other hand, in Quebec, the pure effects of proportions married and marital fertility were less than 1.5 percent each.

The fact that all provinces were subject to an increasing female nuptiality effect may appear, at first glance, to take away from the argument that the increasing nuptiality of the second stage was due to the in-migration of persons, into the western parts of Canada, from areas of Europe typified by high proportions married. However, the provinces[15] least effected by this migration experienced only a 5[16] percent effect of increasing nuptiality from 1891 to 1921. In comparison, the pure effect for Canada as a whole was 15 percent. Therefore, the argument holds that, in large part, the increasing nuptiality of the second stage was a migration-related phenomenon.

The period from 1921 to 1961 was characterized by a continued decline in general fertility at the national level, although the decline was smaller than that registered during the second stage of fertility. It will be recalled that this period experienced a marked rise in the proportion

married which again functioned to negate, in large degree, the effect of declining marital fertility. The observed change in general fertility was greater in the western provinces than in the eastern provinces. The differential is particularly marked if Quebec is excluded, as the observed decline in Quebec was significantly greater than that experienced by any other province during this period. Also, the effect of increasing non-marital fertility was smaller in the eastern provinces. The smaller observed decline in general fertility rate in the east, therefore, was due to the effect of the nuptiality variable. The pure effect of increasing proportions married was much larger in the eastern provinces, approximately double that of the western provinces. As was discussed earlier, the eastern provinces experienced greater changes in the variables of marital fertility and female nuptiality during this period than did the western provinces and the extent of change was related to the initial (1921) levels of the variables.

The fourth period of fertility witnessed a continuation of an east-west differential in extent of actual change in general fertility rate. However, in this period, the differential was reversed, with the eastern provinces registering larger declines than the western provinces. In this period, it was not the operation of the nuptiality variable that was crucial in determining the east-west differential. All provinces experienced declining

nuptiality in the decade from 1961 to 1971, with a larger declining effect in the western provinces. Thus, if nuptiality was the important determining factor, we would expect the western provinces to have been characterized by the larger decline in observed general fertility rate. Such did not occur because of the differential effect of the variable of marital fertility. In the eastern provinces, the effect of declining marital fertility was greater than in the western provinces; the mean pure effect in the east was a 37 point decline whereas in the west the comparable figure was 29. The effect of non-marital fertility, which was generally positive, was extremely small and slightly greater in the eastern provinces.

This component analysis can shed some light on the previously mentioned provincial variations in overall fertility decline. First, the anomalous position of Quebec can be clarified. The smaller decline in fertility in Quebec, as compared to Ontario, in the first stage was, in large part, due to the smaller decline registered in female nuptiality. Of course, the decline in marital fertility rate was also smaller in Quebec than Ontario during this period, but the degree of differential in overall fertility would have been considerably less if both provinces had experienced similar nuptiality change. Also, the small increase in fertility exhibited by Quebec, and by New Brunswick, in the second stage of fertility, was almost

entirely the result of increasing nuptiality. Quebec experienced an overwhelming large decline in fertility in the third stage of fertility, 1921-1961, the result of a favourable combination of factors. The effect of increased nuptiality was less in Quebec, relative to her eastern neighbours; the effect of decreasing marital fertility was greater; the effect of increasing non-marital fertility was very minor. All three effects combined in the determination of large decline in overall fertility. It can be said that much of the "uniqueness" in Quebec's fertility experience, particularly in the first and third stages of fertility, was the result of the particular combination of changes in marital fertility and female nuptiality rather than the extent of change in either variable alone.

Nevertheless, Quebec did lag behind the other provinces in the trend of marital fertility decline. At the beginning of the third stage, 1921, the marital fertility rate in Quebec, at 283.7, was 33 percent higher than the Canadian average. The province second to Quebec was New Brunswick, a province adjoining Quebec and with a large French Canadian population. This pocket of high marital fertility in the central region of Canada, corresponding to a population linguistically and ethnically distinct from populations to the east and to the west, suggests the importance of cultural factors in the acceptance of fertility control within marriage, as has been found in

western Europe.

The importance of culture as a determinant of demographic behaviour has been observed in terms of the female nuptiality variable as well. The western part of Canada, with an ethnic composition distinctively different from that of more eastern portions, displayed high levels of female nuptiality, particularly in the second stage, the period of western settlement.

From these differing levels of marital fertility and proportions married, the Canadian provinces embarked on a path of convergence, beginning in 1921. Where marital fertility was high, it declined a large amount; where marital fertility was less high, it declined a lesser degree. Where proportions married was low, it increased substantially; where proportions married was higher, it increased to a lesser amount. As a result, provincial variation in overall fertility lessened, as well as provincial differentials in the major components, marital fertility and female nuptiality. Traditional cultural factors began to lose their importance, as a Canadian pattern emerged. The path that each province took in the achievement of this Canadian pattern differed depending upon the particular mix of marital fertility and proportions married that characterized it prior to the trend toward convergence.

It can be said that it is the relationship between

marital fertility and proportions married, in the determination of overall fertility level and trend, that lies at the heart of Canadian fertility transition. The following two chapters examine these two variables in further detail.

Footnotes

[1]The pre-1931 constancy is a forced one; because of lack of data prior to 1921, illegitimate births are assumed to comprise 2 percent of total births.

[2]The sum of changes in the constituent parts does not equal the total change in observed societal fertility, due to interaction effects.

[3]As data concerning illegitimate births are lacking for the second period, the same assumption is made, i.e., that illegitimate births comprise 2 percent of total births. Therefore, it is not possible to measure the effect of non-marital fertility change in any real way.

[4]In Australia, between 1861-65 and 1891-95, the crude birth rate declined approximately 19 percent (Spencer, 1971:249). In the United States, the reduction between 1850 and 1890 was about 28 percent (Coale and Zelnik, 1963:21; Thompson and Whelpton, 1933:263).

[5]Between 1850 and 1890, the percent reduction in crude birth rate in selected western European societies was as follows: United Kingdom (England and Wales) 9.6 percent; Germany 4.0 percent; Netherlands 4.9 percent; Sweden 12.2 percent (Mitchell, 1975:108f). In Portugal, a slight increase in the crude birth rate was registered between these years (Livi-Bacci, 1971:21).

[6]Data concerning female nuptiality in the United States prior to 1890 do not exist.

[7]In this period, crude birth rates registered the following percent reductions: Australia 27.5 percent; United States (whites only) 19.9 percent; United Kingdom (England and Wales) 15.6 percent; Germany 27.4 percent; Netherlands 13.1 percent; Sweden 15.7 percent; Italy 15.5 percent (Coale and Zelnik, 1963:21; Mitchell, 1975:108f; Livi-Bacci, 1977:21; Spencer, 1971:249).

[8]Excluding Newfoundland.

[9]The data for the "West" indicated an increase in marital fertility rate in the decade 1881-1891. However, the data deficiencies of this area cast doubt upon any interpretation that marital fertility did, in fact, rise.

[10]Quebec experienced the highest level of marital fertility until 1881, but provincial differentials were small at that time. In 1881 and 1891, Prince Edward Island exhibited a level of marital fertility higher than Quebec. It was only after the turn of the century that Quebec's marital fertility rate was constantly and substantially the highest in the nation.

[11]The one exception is Prince Edward Island, an eastern province, which experienced a high marital fertility rate in 1941 but which experienced an increase in marital fertility during the period 1941-1961.

[12]British Columbia and Manitoba are included.

[13]This relationship is most notable for the sub-period, 1941-1961.

[14]The rates were standardized at the levels observed for Canada in 1851.

[15]The provinces are Prince Edward Island, Nova Scotia, New Brunswick, and Quebec.

[16]This is a weighted mean, calculated using 1921 provincial population figures.

CHAPTER V

MARRIAGE PATTERNS

Marriage plays an important role in the demography of a population. On the one hand, marriage, or nuptiality, is a demographic variable in its own right, as marriages are "vital" events in a sense analogous to births and deaths. On the other hand, nuptiality can play a significant role in the determination of other demographic variables, notably fertility. Thus, the variable of marriage may be viewed from two perspectives: in terms of its effects and in terms of its determinants.

We have already looked at the effect of marriage patterns upon the Canadian fertility experience. A related concern is the marriage pattern itself, with the aim of discovering the variables related to nuptiality. This concern is in no way a trivial one, in terms of the analysis of fertility, as marriage is a family formation variable, setting the stage for childbearing in a society that normatively views marriage and childbearing as inseparable phenomenon.

A necessary first step is a more detailed examination of the Canadian marriage pattern over the period

from 1851 to 1971. So far, nuptiality has been looked at in relatively gross fashion, in terms of the proportion of the female population aged 15-49 that is married. For the purposes of assessing the effect of nuptiality upon overall fertility level and trend, that measure is adequate. However, it is a general measure that does not illuminate varying aspects of nuptiality and nuptiality change. It ignores the issue of male nuptiality altogether, as it plays no direct fertility-determining role. Also, it does not elucidate two important aspects of nuptiality: its timing and its quantity. In order to more fully understand marriage in Canada, these two aspects must be examined separately.

The timing of marriage refers to the age at which people marry and is typically assessed by measuring the percent of the male and female population aged 20-24 and 25-29 that is single (i.e., never-married). A later-marrying population will have a higher percent single in the age groups 20-24 and 25-29 than will an earlier-marrying population. The statistic of the average (mean or median) age at (first) marriage is also commonly used. The quantity of marriage, the extent to which people marry, is usually measured in terms of the percent of the male and female population at the end of the childbearing ages, typically 45-49, that is single. A population characterized by what

is called "universal" marriage will typically have a lower percent single in the age group 45-49, usually around 2-3 percent, than a population characterized by "non-universal" marriage.

Table XXVIII presents data on the percent of the male and female population aged 20-24, 25-29 and 45-49 that is single and the average age at (first) marriage for Canada from 1851 to 1971. Focussing on timing of marriage, several features can be noted. First, the percent single at ages 20-24 and 25-29 is always higher for males than for females, indicating the commonly observed phenomenon of younger marriage for women than for men. The statistics on average age at marriage indicate that the age difference has approximated 3 years, with a narrowing gap over time such that by 1971 the difference was slightly over 2 years. A second feature concerns the trend of the timing of marriage. The overall trend in the percent single at ages 20-24 and 25-29 was one of increasing percentages single over the course of the latter half of the nineteenth Century followed by decreasing percentages single throughout the twentieth Century. There do exist a few exceptions to this general trend: a slight reversal of the decline in the twentieth Century occurred in the depression year of 1931; the decade 1961-1971 witnessed an increase in the percent of females single in the age group 20-24. A third feature concerns the relative importance of decreases in the percent

Table XXVIII

Percent Single at Ages 20-24, 25-29, and 45-49 and Average Age at (First) Marriage, for Males and Females. Canada, 1851-1971

	Males				Females			
	Percent Single			Average[6] Age at Marriage	Percent Single			Average[6] Age at Marriage
	20-24	25-29	45-49		20-24	25-29	45-49	
1851[1]	66.2	44.8	9.1	26.1	42.1	29.4	8.2	23.0
1861[2]	73.9	50.9	10.3	27.1	52.3	37.2	10.0	24.5
1871[3]	74.2	53.0	6.7	28.1	51.3	38.3	7.3	25.4
1881[4]	78.6	53.5	9.2	27.9	57.2	38.1	11.3	25.1
1891[4]	87.1	50.6	9.7	29.1	66.8	34.7	9.4	26.0
1911[5]	82.5	54.3	15.1	29.2	59.6	32.3	12.0	24.9
1921[5]	81.7	47.6	14.1	28.0	56.9	28.7	11.1	24.3
1931[5]	85.5	52.1	14.0	28.5	63.1	32.4	10.3	25.1
1941[5]	83.8	50.7	14.2	26.3	61.0	32.9	11.2	23.0
1951	74.4	35.1	13.1	24.3	48.5	20.7	11.7	22.0
1961	69.5	29.6	10.5	24.0	40.5	15.4	9.5	21.1
1971	67.6	25.6	9.1	23.5	43.5	15.4	7.0	21.3

[1]Refers to Lower Canada and Upper Canada.

[2]Refers to Lower Canada, Upper Canada and Nova Scotia.

[3]Refers to Ontario, Quebec, Nova Scotia and New Brunswick.

[4]Same as 3, with Prince Edward Island, Manitoba and British Columbia.

[5]Refers to present area of Canada, excluding Newfoundland.

[6]For 1851-1931, the figures are computed singulate mean ages at (first) marriage, for 1941-1971, the figures are median ages at (first) marriage. For the period from 1851 to 1891, the data were interpolated into 5 year age groups.

Sources: Censuses of Canada: 1851-52 (v. 1, appendices 5 and 6); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 8); 1881 (v. 4, table G); 1891 (v. 4, table H); 1921 (v. 2, table 29); 1931 (v. 3, table 12); 1941 (v. 3, table 7); 1951 (v. 2, table 1); 1961 (cat. 92-552, table 78); 1971 (cat. 92-730, table 1). Vital Statistics: 1971 (v. 2, table 7).

single in the age groups 20-24 and 25-29 to the general pattern of decline in the twentieth Century. Although decreases were registered in both age groups, larger reductions occurred at ages 25-29 than ages 20-24 for the period from 1911 to 1971. Thus, change in the timing of marriage does not signal a trend of marrying at very young ages so much as it indicates a trend of discontinuation of marrying at relatively late ages. In other words, the age span during which the majority of persons contracted marriage narrowed during this century. Data presented in the Vital Statistics publications for the years 1921-1971 confirm this proposition. The data presented in Table XXIX indicate a trend of convergence in the age distribution of marriages. Although the percentage of marriages occurring at the teen-age years increased somewhat, approximately 5 percent for both males and females, the increase at ages 20-24 was more marked. The trend of concentration of marriage in the age group of the early 20s was particularly significant in the case of men: in 1921, 30.4 percent of marriages occurred in the age group 20-24, by 1971, the percent was 52.7. The percent of marriages at ages over 25 steadily declined from 1921 to 1971 for both sexes. Therefore, the twentieth Century pattern of change in marriage timing involved two distinct aspects: a trend toward marrying at younger ages and a convergence in the ages at which the majority of the population married. The trend of

Table XXIX

Percent of Marriages Occurring at Given Ages, Males and Females, Canada, 1921-1971

	Percent of Marriages Occurring at Ages:					
	-19	20-24	25-29	30-34	35-39	40-44
Males						
1921[1]	1.9	30.4	31.3	16.3	8.5	4.5
1931[2]	2.5	35.4	32.2	13.4	6.4	3.6
1941[2]	2.5	34.0	33.8	14.8	6.5	3.0
1951[3]	5.2	42.5	27.0	10.6	5.2	2.9
1961	6.8	47.1	24.4	9.1	4.2	2.2
1971	7.2	52.7	21.4	6.4	3.3	2.3
Females						
1921[1]	21.9	39.0	20.0	8.7	4.6	2.5
1931[2]	23.0	43.7	18.5	6.2	3.2	1.9
1941[2]	19.3	42.9	19.9	7.9	3.3	1.6
1951[3]	24.8	43.0	16.2	6.3	3.3	2.1
1961	31.6	42.5	11.4	4.9	2.8	1.8
1971	27.3	48.4	11.3	3.9	2.2	1.7

[1]Excludes Yukon, Northwest Territories, Newfoundland and Quebec.

[2]Excludes Yukon, Northwest Territories, and Newfoundland.

[3]Excludes Yukon and Northwest Territories.

Sources: Vital Statistics: 1921 (table 26); 1931 (table 55); 1971 (v. 2, table 10).

decreased variability in age at marriage appears to indicate the development of an age at marriage norm that dictates marriage occur in the early 20s, although somewhat later for men than for women.

A fourth characteristic embodied in the data concerning marriage timing is the similarity of trend for the sexes. Although the magnitude of the percent single at ages 20-24 and 25-29 and of the average age at marriage statistics differs for males and females, with the data for males indicating an older marriage age throughout the entire period, the changes over time are rather similar. Both men and women experienced the trend of general increase in marriage age in the second half of the nineteenth Century and decrease since the turn of the century. Similarly, both sexes experienced decreased variation in the range of the ages at marrying. One notable deviation from the similarity of male and female trends in marriage timing exists. In the decade 1961-1971, males continued to exhibit a trend toward younger age at marriage: the percent single at ages 20-24 and 25-29 declined and the median age at marriage decreased from 24.0 years to 23.5 years. On the other hand, females exhibited some increase in marriage age during this decade: the percent single at ages 20-24 increased 3 percent, the percent single at 25-29 remained constant, and the median age at marriage increased slightly, from 21.1 to 21.3 years. A possible explanation for the male and female dissimilarity

in trend in this decade will be provided shortly. The major point here is that the general pattern of marriage timing change was essentially the same for men and women.

The second aspect of nuptiality is that of its quantity. Data on the extent to which Canadians have married, as assessed by the percent single in the age group 45-49, are presented in Table XXVIII. It can be seen that the data on quantity of marriage are somewhat more ambiguous than the data on timing of marriage, although a few general points can be made. In terms of the magnitude of the percent single, again a sex differential exists. Just as women have married at younger ages than men, they have tended to marry more than men. The percent single for women is always higher for males than for females, although the differences are small, in the range of 2-3 percent for the most part. Thus, it can be said that marriage for women in Canada has been slightly more "universal" than for men. Yet, one would hesitate to classify Canada as a society characterized by universal marriage. The percent single at ages 45-49 has typically been close to, or in excess of, 10 percent for men and women. In terms of trend in marriage quantity, no clearcut trend exists. The latter half of the nineteenth Century was marked by fluctuation around relatively low values of the percent single. The period around the turn of the century was characterized by a large upswing in the percent single which lasted until

around 1951. The recent decades experienced rather large reductions in the percent single. This trend in marriage quantity was essentially similar for both sexes, although women did not experience the early twentieth Century upswing to the same extent that men did. The trend of quantity of marriage did not closely parallel the trend of the timing of marriage. The trend of increasing percent single in the age groups 20-24 and 25-29 in the late 1800s was not accompanied by increases at ages 45-49. The declining percent single at the younger ages in the twentieth Century was not paralleled by declines in the older age group until after 1951. Therefore, it can be said that timing and quantity are two distinct aspects of nuptiality and nuptiality change, aspects which do not necessarily respond in similar ways to changing social and economic conditions. In terms of effect on fertility, the timing aspect of marriage, the age at marriage, plays a more important role than the quantity aspect in populations, like Canada, in which the majority of persons eventually marries. However, in terms of the marriage pattern itself, the quantity of marriage cannot be ignored.

The analysis of marriage patterns in Europe has led to the discovery of a unique historical European pattern. Hajnal (1965) found that the nations of western Europe exhibited a marriage pattern in their historical past that distinguished itself in terms of both timing and quantity.

This pattern, which he termed the "European" pattern, was characterized by marriage at relatively old ages and by a substantial proportion of the population never marrying, relative to the predominantly Slavic populations of eastern Europe and to non-European societies. Although it is difficult to know in any precise way when the European pattern originated, it is believed to have commenced during the 1600s in the general population and perhaps a little earlier in upper class groups. While the beginning is hard to pinpoint, given increasing data limitations as one moves back in time, the end is quite identifiable. By the 1940's, the European marriage pattern was disappearing. At this time, all societies of Europe experienced what has been termed a "marriage boom," with decreases in the percent single at ages 20-24 and 25-29 registered, indicative of a trend toward younger age at marriage, and with decreases occurring in the percent single at older ages, indicative of an increased quantity of marriage.

A question readily comes to mind: was Canada characterized by a marriage pattern of the European type, or did marriage occur at younger ages and more universally in Canada than in the societies of western Europe? There are reasons to expect either possibility to be the case. On the one hand, Canada was populated, in large part, by persons of western European origin. If the reasons underlying the European pattern lie in the cultural realm, we would expect

a transference of the marriage pattern, relatively intact, to Canada. On the other hand, although Canadians share a common cultural background with western Europeans, the fact of migration may have operated to affect marriage in Canada in a non-European fashion. For instance, given the fact that migration tends to be male-dominated, the balance of the sexes in Canada would presumably be favourable for women in terms of the availability of mates. Therefore, we would expect a younger age at marriage and a larger quantity of marriage for Canadian women than for western European women, who have typically suffered from male shortage. Also, the experience of immigration itself could lead to younger marriage as people seek to regain "a family."

Also, differences in economic conditions could have functioned to affect a differential marriage pattern in Canada than in western Europe. The excess of land relative to people in Canada, as compared with Europe, could have operated to increase the propensity to marry in Canada by making marriage more feasible. On the other hand, if the more favourable land/people ratio in Canada operated as a factor raising expectations for upward mobility, then marriage would occur at relatively old ages and less universally given competition with economic goals.

Table XXX presents values of the percent single at ages 20-24, 25-29, and 45-49 for males and females in western Europe, eastern Europe, and Canada at the turn of

Table XXX

Percent Single at Ages 20-24, 25-29, and 45-49, For Males and Females. Western Europe,[1] Eastern Europe[2] and Canada, Circa 1900

	Females		Males	
	Percent Single	Range	Percent Single	Range
Western Europe				
20-24	71.7	(86-55)	88.2	(96-81)
25-29	41.8	(59-26)	52.7	(78-34)
45-49	15.6	(29-10)	12.8	(20-6)
Eastern Europe				
20-24	22.2	(28-16)	57.8	(67-50)
25-29	5.6	(9-2)	22.2	(31-18)
45-49	2.2	(4-1)	4.0	(4-1)
Canada[3]				
20-24	66.8		87.1	
25-29	34.7		50.6	
45-49	9.4		9.7	

[1]Unweighted mean of 16 western European populations.

[2]Unweighted mean of 5 eastern European populations.

[3]1891 figures.

Sources: Hajnal (1965:102-3); Table XXVIII.

the century. As the nations of Europe exhibited a certain amount of variation in percent single, the range of values in eastern and western Europe is also indicated. The line of demarcation between the "European" pattern and the "non-European" pattern can be clearly drawn. In the European pattern, marriage occurs at substantially older ages. For example, in the case of women, approximately three-quarters of the age group 20-24 remain single in western Europe as compared with less than one-quarter in eastern Europe. In the age group 25-29, more than 40 percent are single in the European pattern as opposed to less than 6 percent. In the non-European pattern, nearly all women have married by age 25 whereas in the European case, a large percentage has yet to marry. In the case of men, values of the percent single at ages 20-24 and 25-29 in both eastern and western Europe are higher than for women, but the regional differential remains. In terms of the quantity of marriage, in the European pattern a substantial percent of both males and females remains unmarried by ages 45-49 whereas in eastern Europe, marriage is virtually universal.

What pattern does the Canadian marriage experience most closely correspond to? There is no question but that Canada fits into the European "camp" in terms of both timing and quantity of marriage. For the three age groups, the percent single in 1891 is slightly lower than the mean

of the western European countries, but the values fall well within the range experienced in western Europe. The one exception is the case of women in the age group 45-49 where the value of the percent single falls outside of the range experienced in the western European countries. Nevertheless, the Canadian value well exceeds the range exhibited in eastern Europe.

It will be remembered that Canada experienced increases in percent single during the latter half of the nineteenth Century, such that the values were substantially higher in 1891 than in 1851. Thus, one could ask whether the Canadian pattern of marriage at the middle of the nineteenth Century similarly corresponded to the European pattern. At this point in time, the placing of Canada is somewhat more ambiguous. For males and females at ages 25-29 and for males at ages 45-49, the values of the percent single in Canada are within the European range. However, for the age group 20-24, the Canadian values are quite a bit lower than registered in western Europe. Hajnal (1965:108) provides us with a "rule of thumb" for the determination of marriage pattern. Marriage is of the European type if the average age at (first) marriage for women is at least 23 years of age and is of the non-European variety if the age is under 21 years. The figure for Canada in 1851 is 23 years. Therefore, marriage in Canada at the middle of the nineteenth Century was of the European variety as well. The

values of the percent single for both sexes at ages 25-29 substantiate this argument.

The low levels of nuptiality that characterized western European societies help to explain the relatively low levels of fertility experienced, through the operation of the Malthusian control mechanism, prior to industrialization and urbanization. That mechanism was operative in Canada as well, although not to the same extent, functioning to limit fertility level.

A number of factors determined the relatively low nuptiality that acted as a check on fertility prior to modernization. One set of variables is that of family structure and the norms concerning family. Goode (1963:22) has pointed out that family systems in the west differed from family systems in the non-west even before industrialization gained a foothold in the west. The west differed in its absence of lineage as the basis of kinship and in its emphasis on the individual and individual responsibility as superordinate over the group, i.e., kin. The greater emphasis upon the individual was translated into a family norm that stated that a couple, upon marriage, set up an independent household and be primarily responsible for their own needs and the needs of their children. Therefore, marriage was postponed, and sometimes forfeited altogether, until a couple could accumulate the resources necessary for family and household formation. The feasibility of early

marriage is reduced when the requirements of marriage are demanding (i.e., independent household) and fall on the individual couple alone (Dixon, 1971:226). Also, the absence of lineage as the basis of kinship was a factor determining reduced nuptiality as the compulsion to marry is less strong when the kin group lacks a vested interest in it (Davis, 1955:36; Dixon, 1971:226). Clan pressures to marry and reproduce are lacking as are the religious implications in the form of ancestor worship. Although the unmarried state was never considered to be an ideal for the general population, it was somewhat more acceptable in the west than in other places where it constituted a denial of lineage obligations.

The stem family tradition, with its system of non-partible inheritance, was another factor determining the European marriage pattern. This custom of non-division of land over generations operated to reduce nuptiality by making marriage more difficult for non-inheriting children. It possibly functioned in the same fashion for inheriting sons if they were forced to postpone marriage until the death or retirement of their fathers. Any substantial reduction in mortality, i.e., increase in life expectancy, would lengthen the waiting period for inheritors. Evidence of the non-partibility of land and its subsequent effect of increasing age at marriage and celibacy has been documented in various parts of pre-industrial Europe such as Ireland

(Kennedy, 1973:151-2), Netherlands (Petersen, 1960:342), Norway (Drake, 1972:190), and Portugal (Livi-Bacci, 1971:55), and in the western parts of eastern Europe (Sklar, 1974:236).

Another factor associated with the development of the European marriage pattern is the doctrines and practices of the Christian religion. Christianity, in both its Protestant and Roman Catholic forms, affected reduced nuptiality through its relationship with family structure and family-related norms. Protestantism is intimately associated with the development of the value of individualism and its extension to the conjugal unit as superordinate over the extended kin group. Similarly, Roman Catholicism promotes the subordination of the wider kin group in a number of ways. It holds that choice of spouse is the domain of the marrying persons themselves; it competes with family members as a beneficiary of estates; it, at least implicitly, accepts non-marriage in the laity through its idealization of celibacy for church personnel; and it, as an organized body, fosters allegiance to itself as a source of authority. Support for the argument that Protestantism and Roman Catholicism, although employing differential means, affect the same end, that of the de-emphasis of the authority of the extended kin unit which, in turn, implies reduced nuptiality, can be found in the research of Sklar (1974).

Therefore, the operation of a set of interrelated

factors appears to account for the existence of the European marriage pattern. The de-emphasis on the extended kin group, a by-product of the Christian form of religion and of the western system of reckoning descent, is translated into a set of norms that makes marriage more difficult and non-marriage more acceptable in the west than elsewhere.

Applying this framework to the Canadian case, Canada's nuptiality experience, as one generally conforming to the European pattern, can be elucidated. Canada was populated predominantly by persons of western European origin who would be expected to bring with them their values, norms, and practices concerning family organization. The pre-eminence of tradition even over policy can be seen in the case of New France. France attempted to augment the size of the colony in the face of low levels of in-migration by officially encouraging and instituting means favouring early and universal marriage. However, it has been estimated that the mean age at (first) marriage in the early years of the eighteenth Century was approximately 23 for women and 27 for men, figures typical of the European marriage pattern (Henripin, 1957:12).

The existence of the European marriage pattern in Canada must be viewed in the light of the European-transferred system of family organization. It goes without saying that Canadians were characterized by the absence of

lineage, as were their European forebearers. Similarly, it seems likely that the value of individualism and individual responsibility existed within the Canadian milieu and perhaps even in stronger form if migration is selective of that characteristic. The norm of independent household at marriage seems likely given these characteristics and the added one that some portion of the population, those immigrating as single adults, would have no alternative but to be responsible for their own family upon marriage.

It will be recalled that the western European stem family form and the system of non-partible inheritance of land may be viewed as determinants of postponed marriage and high rates of permanent celibacy. Unfortunately, it is difficult to obtain information about these characteristics for Canada. The only clearcut evidence that exists concerns the province of Quebec. In that province, the stem family system was operative. One son, not necessarily the eldest, would inherit the family farm intact. His siblings would leave the farm in search of economic and marriage opportunities (Gerin, 1964:35; Miner, 1939:79-80). Miner found no differential in mean age at marriage, approximately 26 years, between inheriting and non-inheriting sons. For the non-inheritors, the relatively late age at marriage can be attributed to the economic difficulties encountered in accumulating the resources necessary for marriage, although the family did provide some aid. For the inheriting son,

marriage occurred late, even in the face of a more secure economic situation, while he waited until the death or retirement of his father and until the majority of his siblings left the paternal farm.

Thus far, marriage has been discussed in terms of factors related with the feasibility and the desirability of marriage. A factor not to be discounted is the availability of mates (Dixon, 1971). Other things being equal, the level of nuptiality of a given sex will be reduced if there do not exist sufficient numbers of the opposite sex of marriageable age. Factors operating to affect a distorted sex ratio are war and high rates of out or in-migration. War and out-migration, due to the sex selectivity of these occurrences, have the effect of lowering the number of eligible males to eligible females. Thus, Europe, which has been affected by war and which experienced emigration in the past, was, until recently, typically characterized by a woman surplus or, conversely, a male shortage at the marriageable ages. On the other hand, high rates of in-migration have the opposite effect; woman shortage at the marriageable ages. In either situation of sex ratio distortion, one sex benefits at the expense of the other in terms of the availability of mates. In the woman surplus case, we would expect higher levels of male nuptiality and lower levels of female nuptiality, as the situation is a favourable one for males and an unfavourable one for females. In the case of a woman

shortage, we would expect the opposite to be the case.

Given the potential importance of the variable of the balance of the sexes, this variable is examined within the Canadian context. First, let us look at the extent of sex ratio distortion in Canada for the period under consideration. Table XXXI presents the number of males per 100 females for two age categories: males aged 22½-27½ to females aged 20-24 and males aged 20-49 to females aged 17½-47½. The first measure reflects the extent of sex imbalance at the chief marrying ages; the second the extent over the total age span at which the majority of people marry. The ratio is not calculated for the exact same ages; rather, the age groups are 2½ years older for males, reflecting the male/female age differential in marrying age. Thus, these measures reflect the number of males relative to the number of females they are most likely to marry.

The data for the two age groups reveal the same general pattern. In the nineteenth Century, the sex ratios were well below unity, indicating a woman surplus and, therefore, a situation unfavourable to the marriage chances of women. At first glance, this might seem to be an unexpected occurrence, given that Canada has been populated by immigrants and that immigration tends to be selective of males. However, it will be remembered that the period from 1861 to 1901 was one of negative net migration in Canada. The sex-selectivity of migration would imply a greater

Table XXXI

Sex Ratios, Canada, 1851-1971

	Number of Males per 100 Females	
	Males 17½-47½/Females 20-49	Males 22½-27½/Females 20-24
1851[1]	96.6	93.1
1861[2]	93.9	92.8
1871[3]	89.5	85.5
1881[4]	81.4	86.5
1891[4]	95.2	91.4
1911[5]	116.5	118.7
1921[5]	103.8	97.0
1931[5]	104.1	97.7
1941[5]	99.6	97.8
1951	97.4	98.9
1961	98.1	100.7
1971	96.7	91.9

[1]Refers to Upper Canada and Lower Canada.

[2]Refers to Upper Canada, Lower Canada, and Nova Scotia.

[3]Refers to Ontario, Quebec, Nova Scotia and New Brunswick.

[4]Same as 3, with Prince Edward Island, Manitoba, and British Columbia.

[5]Excludes Newfoundland.

Sources: Censuses of Canada: 1851-52 (v. 1, appendices 5 and 6); 1861 (v. 1, General Abstract of Ages), 1871 (v. 2, table 7); 1881 (v. 2, table 7); 1921 (v. 2, table 9); 1971 (cat. 92-715, table 7).

movement of men out of the country than women, resulting in an unfavourable balance of the sexes, from the point of view of women. As a result of the large-scale immigration accompanying western expansion after the turn of the century, the sex ratio was reversed, with a surplus of men relative to women. A large distortion occurred only in 1911, a time of peak immigration. After that, the ratio remained quite close to unity until 1971. In 1971, the sex ratio dropped rather substantially, particularly for the younger age group. This phenomenon reflects not so much the effect of migration as the effect of prior demographic behaviour. Women aged 20-24 in 1971 were born at the height of the "baby boom" whereas men aged 22½-27½ were born earlier, some of them in the low fertility years of the mid 40s. Therefore, the group of women aged 20-24 is large relative to the group of men 22½-27½ because of the differential size of the birth cohorts. If marrying age lacked a sex differential, i.e., if men and women married at the same average age, this phenomenon would not occur. For example, the ratio of males 20-24 to females of the exact same age group in 1971 is very close to unity, 99.4, as opposed to the sex ratio of 91.9 as presented in Table XXXI.

It is possible to assess the effect of sex ratio change on the timing of marriage, as measured by the percent single at ages 20-24.[1] By multiplying the percent single in a standard year by the ratio of the sex ratio in the

standard year (in this case, 1851) to the sex ratio observed in a given year, one obtains an expected percent single, i.e., the percent single that would occur if only the effect of the sex ratio variable was operative. For example, for females in 1861 the observed percent single at ages 20-24 was 52.3; the expected percent single is 42.2 (42.0 times 93.1/92.8). The actual change over the decade 1851-1861 was a 10.3 percent increase in percent single; the expected change, on the basis of sex ratio change alone, is .2 percent. The difference between the actual change and the expected change can be interpreted as the amount of change in percent single due to factors other than the sex ratio.

It can be seen in Table XXXII that for most years, for both sexes, the effect of changes in the sex ratio on the percent single at ages 20-24 is relatively small, and, as would be expected, in opposite direction for the sexes. The major departures, in terms of magnitude of effect, occur in 1911, 1921, and 1971. In 1911, large-scale immigration of males produced a sex ratio highly favourable for women in terms of marriage, and the reduction in the percent of females single in the age group 20-24 reflects that fact. Looking at the case of males at this time, a very interesting phenomenon can be observed. The expected change in percent single at ages 20-24 from 1891 to 1911 is a 19.4 percent increase in percent single, given a change in sex

Table XXXII

Actual and Expected Percent Single at Ages 20-24
Males and Females. Canada, 1851-1971

Males	Actual	Expected	Actual Change	Expected Change	Actual - Expected
1851	66.16	66.16	-	-	-
1861	73.85	65.93	+7.69	-.23	+7.92
1871	74.19	60.72	+.34	-5.21	+5.55
1881	78.61	61.44	+4.42	+.72	+3.70
1891	87.12	64.96	+8.51	+3.52	+4.99
1911	72.14	84.34	-4.98	+19.38	-24.36
1921	81.72	68.91	-.42	-15.43	+15.01
1931	85.53	69.38	+3.81	+.47	+3.34
1941	83.73	69.48	-1.80	+.10	-1.70
1951	74.44	70.27	-9.29	+.79	-10.08
1961	69.49	71.52	-4.95	+1.25	-6.20
1971	67.63	65.32	-1.86	-6.20	+4.34
Females					
1851	42.03	42.03	-	-	-
1861	52.32	42.17	+10.29	+.14	+10.15
1871	51.31	45.80	-1.01	+3.63	-4.64
1881	57.21	45.26	+5.90	-.54	+6.44
1891	66.75	42.81	+9.54	-2.45	+11.99
1911	59.39	32.97	-7.36	-9.84	+2.48
1921	56.92	40.35	-2.47	+7.38	-9.85
1931	63.15	40.08	+6.23	-.27	+6.50
1941	60.95	40.02	-2.20	-.06	-2.14
1951	48.52	39.57	-12.43	-.45	-11.98
1961	40.47	38.88	-8.05	-.69	-7.36
1971	43.50	42.57	+3.03	+3.69	-.66

Sources: Tables XXVIII and XXXI.

ratio highly unfavourable to the marriage chances of men. However, the actual or observed change was a 5 percent decrease in the percent single. Factors other than the sex ratio exerted a counterbalancing effect larger than that of the sex ratio, affecting a decrease where an increase would be expected given the change in the availability of mates. One can only speculate as to what these factors might be. One variable that comes to mind is ethnicity. It will be remembered that as a result of Laurier's immigration policy, Canadian immigration in the years following the turn of the century was characterized by a significant movement into Canada of people from eastern Europe, an area typically exhibiting a non-European marriage pattern. In terms of Canada, two possibilities exist. One, the male eastern European immigrants in Canada were already married, given the early age at marriage in eastern Europe, but their wives did not accompany them to Canada. These men would be classified as married in the Canadian census. Two, the male eastern European immigrants were single upon arrival in Canada, but married soon, drawing from women in Canada or from women in their home countries. It seems likely that both occurred and with the same effect, that of deflating the percent single for males in the age group 20-24. Whether the ethnic variable is the crucial one is somewhat open to question, given lack of data: what is not open to question is that something other than availability of mates

was affecting the timing of marriage for males in 1911.

Also, in 1921, the expected effect of the sex ratio variable is quite large, given a return to "normalcy" in the balance of the sexes. The change between 1911 and 1921 in the sex ratio was one favourable to women and unfavourable to men. Thus, we would expect to observe an increase in the percent single for men and a decrease for women. However, the actual change over the decade was quite small, and in the unexpected direction for men. Therefore, again, change in the sex balance variable was not an important determinant of the percent single at ages 20-24.

In 1971, as a result of the combined effects of the "baby boom" and the sex differences in marrying age, the ratio of males $22\frac{1}{2}$-$27\frac{1}{2}$ to females 20-24 fell well below unity, an occurrence conducive to the marrying chances of men. The actual change in the percent single in the decade 1961-1971 was in the expected direction for both sexes; males experienced a decrease in percent single whereas females experienced an increase. However, the relative importance of the sex ratio variable differed for the sexes. For women, the bulk of the increase in percent single between 1961 and 1971 can be accounted for by the change in the sex balance. For men, though, the actual decrease was quite a bit smaller than expected on the basis of the sex ratio change alone.

Two conclusions can be drawn. One, the effect of

sex ratio change on changes in the percent single in the age group 20-24 was somewhat greater for women than for men. In both 1921 and 1971, the observed change in the percent single can be largely accounted for by change in the availability of men. On the other hand, for men, changes in the percent single were generally insensitive to changes in sex balance. Two, for the entire period under consideration, the effect of the sex ratio variable was minor. This can be seen in a general way by the fact that changes in the observed percent single tended to be in the same direction for both males and females. Concomitant change in the percent single for males and females is not to be expected if a variable that exerts opposing forces on males and females is an important factor. Also, the greatest decade change in the percent single occurred in 1941-1951, with a 12 percent decrease for women and a 9 percent for men. Yet, the change in the sex ratio registered between 1941 and 1951 was extremely small. This observation strengthens the argument that the availability of mates has not played a significant role in the determination of marriage patterns in Canada, at least in terms of the timing aspect of nuptiality.

The above comments apply to marriage at the national level. However, special consideration is due the case of the western provinces at the time of major western expansion. Due to the large-scale movement of males into

that area, the sex ratio became particularly distorted. Table XXXIII indicates the magnitude of the sex imbalance in the chief marrying ages in the west relative to the whole of Canada in the years 1881, 1891, and 1911. It can be seen that the western provinces were characterized by a large preponderance of males relative to females in the chief marrying ages. We would, therefore, expect that the western provinces would exhibit a higher percent single for males at ages 20-24 and a lower percent single for females than the Canadian average, other things being equal. In the case of women, this expectation proves to be correct. However, in the case of men, the values of the percent single in the western provinces were approximately the same as those experienced in Canada as a whole and, thus, do not reflect the unfavourable marriage opportunities incurred by men as a result of sex imbalance.

Even though the percent of single women at ages 20-24 in the western provinces is in the expected direction, i.e., lower than the Canadian average, a closer look at the relationship between the magnitude of the sex ratio and the level of the percent single within the western provinces reveals a certain degree of ambiguity. For instance, in both British Columbia and Manitoba, the percent single increased over the period from 1881 to 1911, but the sex ratio became progressively more favourable for the marriage

Table XXXIII

Percent Single at Ages 20-24 for Males and Females and Sex Ratios. Canada and Western Provinces, 1881, 1891, 1911

	Percent Single		Sex Ratio
	Males	Females	Number of Males Aged 22½-27½ per 100 Females Aged 20-24
Canada			
1881	78.6	57.2	86.5
1891	87.1	66.8	91.4
1911	82.1	59.4	118.7
Manitoba			
1881	71.4	14.0	164.0
1891	89.8	51.7	137.8
1911	85.9	52.2	133.2
Saskatchewan			
1911	86.3	39.3	197.9
Alberta			
1911	84.0	43.9	206.4
British Columbia			
1881	58.7	32.1	158.4
1891	87.5	43.3	230.0
1911	83.6	47.7	251.9

Sources: Censuses of Canada: 1881 (v. 2, table 7; v. 4, table G); 1891 (v. 4, table H); 1921 (v. 2, table 9; v. 2, table 29).

chances of women in British Columbia and less favourable in Manitoba. Also, in the year 1911, the sex ratio increased steadily as one moves westward. The provincial variation in percent single did not reveal a corresponding pattern. In that year, the lowest value of the percent single was experienced in the province of Saskatchewan, despite the fact that its sex ratio was less favourable to women than that of either Alberta or British Columbia. Therefore, even in the case of women, the determining effect of the sex ratio variable on the timing of marriage is not clearcut.

A second demographic influence must be considered in its effect on nuptiality. Again, the issue is migration, but in terms of its effect on the percent single independent of the sex ratio factor. Hajnal (1953) has pointed out that a given value of the percent single not only reflects marriage behaviour, but is also influenced by migration and mortality effects. To the extent that the migration and mortality experiences of the single and ever-married populations differ, the value of the percent single is affected. Typically, the single population experiences a higher level of mortality than the ever-married population; to the degree that this phenomenon occurs, observed values of the percent single are deflated. Generally, mortality effects are quite small, however. On the other hand, migration effects can be quite substantial. Not only is migration sex-selective, it also tends to be marital status-

selective, with single persons more likely to migrate than ever-married persons. To the extent that marital status-selectivity is operative, values of the percent single are inflated in areas of positive net migration and deflated in areas of negative net migration.

It will be remembered that Canada, during the latter half of the nineteenth Century, experienced negative net migration. Given the marital status-selectivity of migration, the observed values of the percent single were lower than they would be in the absence of this migration effect. As data on migration by marital status are not available, it is not possible to assess the magnitude of this effect. It can be stated, however, that the values of the percent single would likely have been somewhat larger had negative net migration not occurred. Therefore, nineteenth Century Canadian nuptiality would have even more closely approximated the European pattern, in the absence of the operation of a variable whose effect is to reduce observed levels of the percent single.

In a similar vein, Canada as a whole was characterized by positive net migration in the twentieth Century, particularly large in the years immediately following the turn of the Century to the beginning of the depression. The values of the percent single, as shown in Table XXVIII were generally high at this time, particularly for men. To some extent, these high levels can be accounted

for by the inflationary effects of marital status-selectivity in migration.

One might wonder why the values of the percent single for women at this time do not exhibit the high levels one would expect as a result of the migration effect. For example, in 1911 and 1921, the values at ages 25-29 were quite a bit lower than experienced during the period 1861-1891 and the values at ages 20-24 were not particularly high. The hint of a possible explanation is provided in data presented in the 1941 Census special report on family size (Dominion Bureau of Statistics, 1945:23). The percent of women ever-married at ages 45-54 in 1941, the majority of whom married for the first time around 1911-1921, is cross-tabulated by place of birth. The differential is rather large, with 87 percent of Canadian-born women ever-married (or 13 percent remaining single) and 98 percent of European-born (non-British) women ever-married (or 2 percent remaining single). The greater propensity of European-born women to marry suggests either that migrating women were married, a reversal of the usual pattern, or that they married soon after arrival in Canada, perhaps migrating for the express purpose of marrying European foreign-born men in Canada.

The low values of the percent single for females in the western provinces, as discussed previously, can be viewed in this light. An area experiencing extremely high

levels of in-migration, an inflationary effect on values of the percent single is expected, and can be observed for men in Table XXXIII. Yet, for women, the levels of the percent single at ages 20-24 were low. To some extent, these low levels can be accounted for by the sex ratio factor, as discussed. However, the differential marriage propensity of Canadian-born and European-born women likely operated as well to affect the lower levels of female nuptiality in the west, given that European-born women settled predominantly in the west.

The analysis of the marriage pattern in Canada is complicated by the effect of migration, both in terms of sex ratio distortion as a factor determining mate availability and in terms of the marital status-selectivity influence. It has been seen that the sex ratio variable did not play a major determining role, at least in terms of the timing aspect of nuptiality. The effect of marital status selectivity is somewhat more difficult to assess. However, looked at in very general terms, it similarly appears to have played a relatively minor part in the determination of the Canadian nuptiality pattern. For example, values of the percent single over the period 1891-1921 registered decreases at ages 20-24 and 25-29 for both men and women. If the marital status-selectivity variable was an important one, increases would be expected, given the high rates of in-migration in the early years of the twentieth Century.

Similarly, the decade of largest decreases in percent single, 1941-1951, was not accompanied by negative net migration in Canada. It can be concluded that the trend of Canadian nuptiality would not have been significantly different if Canada had been a closed population. In the light of this conclusion, marriage in Canada must be examined within the context of social, cultural, and economic factors.

We have seen that, in general, the levels and trend of nuptiality in Canada correspond to that of western Europe. The period prior to 1941 was characterized by the European pattern of high average age at (first) marriage and relatively high levels of permanent celibacy. Possible reasons for this pattern have been discussed within a framework focussing on the feasibility and desirability of marriage as mediated by the structure of western family organization and its associated norms. The period after 1941 was characterized by a "marriage boom" as was the case in other western populations. In some part, this boom was precipitated by World War II, i.e., the "making up" of post-poned marriages, and appears particularly large when compared to the reduced levels of nuptiality that resulted from the economic depression in the immediately preceding period. Yet, the boom continued for a longer time period than the postponement effect of World War II could possibly account for. For men, average age at (first) marriage

registered declines for the entire period from 1941 to 1971. For women, some reversal of the trend of continuous decline occurred in the decade 1961-1971, which can be accounted for by the phenomenon termed the "marriage squeeze." The "marriage squeeze," a commonly observed occurrence within western populations at this time, resulted from the combined effects of the "baby boom" and differential ages at marriage for men and women, producing a situation in which a relatively large cohort of women exists within a marriage market that consists of a smaller cohort of men.

Attention may be directed to a somewhat different issue than the level and trend of nuptiality: differentials in marriage within Canada. These issues are not unrelated as an examination of marriage differentials can aid in the understanding of the changes in nuptiality that have occurred over time.

One source of information is the special study of family size that was performed in conjunction with the 1941 Census. In that study, certain data were published concerning female age at marriage. The data are rather limited, however: they deal only with women aged 45-54 in 1941 who are currently (i.e., in 1941) married and living with their husbands in families in which there is at least one wage-earner, typically the husband. The data are presented in terms of the percent of these women who married for the first time before the age of 25, cross-classified by

a number of census-selected characteristics. Therefore, the data refer to differentials in age at first marriage for women who did marry and were married at the ages 45-54. The information cannot be thought of as relating to non-marriage, as never-married women are not included, or as relating to age at first marriage for all women who did marry.

The characteristics cross-classified with percent marrying for the first time under 25 years of age are ethnicity (categorized as French, British, or Other), place of residence (rural or urban), years of schooling (less than 8 years or more than 13 years), and earnings of family head (less than $950 or more than $2950). The data are presented in Table XXXIV. It can be seen that young age at marriage (high percentages marrying under age 25) is associated with ethnicity other than British or French, low level of educational attainment, and low level of earnings of family head. Conversely, older age at marriage is associated with British ethnicity, high educational attainment level, and high income level. The place of residence variable appears to exert no important effect on age at marriage.[2]

It appears that level of educational attainment exerts the strongest influence on age at marriage at this time. Both the highest and the lowest values of the percent marrying under age 25 occur within this category: the magnitude of the differential is 16.4 percent, i.e., 70 percent of women with less than 8 years of schooling married

Table XXXIV

Percent of Married Women aged 45-54 Marrying for the First Time under 25 Years, by Ethnicity, Educational Attainment, Earnings of Head, and Place of Residence. Canada, 1941

	Percent Marrying Under Age 25
Ethnic Group	
French	62.8
British	57.9
Other	65.0
Educational Attainment	
0-8 years	70.0
13+ years	53.6
Earnings of Head	
-$950	65.7
+$2950	57.3
Place of Residence	
Rural	62.5
Urban	61.2

Source: Dominion Bureau of Statistics (1946:30).

at ages under 25, whereas, 16.4 percent less, or 53.6 percent of women with more than 13 years of schooling married under age 25. It is probable that the effect of increased education on age at marriage is two-fold. One, woman who are attending school postpone marrying until their education is completed. Two, education itself can operate

to transform attitudes and values in such a way that marriage becomes only one of several options. The provision of alternatives to marriage can decrease the desirability of marriage and raise marriage age by making marriage less an economic necessity and less an unquestioned goal.

The variable of earnings of family head similarly exerts an influence on age at marriage, although somewhat smaller than the variable of educational attainment, with low earnings associated with younger age at marriage. Also, the ethnic variable is important, with a 7.1 percent differential between the British, displaying the lowest percent marrying under age 25, and the Other category, which consists of non-British and non-French ethnic groups in Canada which are, in the main, of European origin. This differential is not unexpected given the previous discussion of marriage patterns in Europe.

It seems likely that the above three variables - ethnicity, educational attainment, and earnings of family head - are related one with the other. Typically, the British-origin group in Canada has been characterized by higher levels of educational attainment and higher income levels than the groups of continental European origin. Because of the possible interrelationships among the variables, it is necessary to examine these data in the light of the three variables acting together. The cross-tabulations are presented in Table XXXV. The overriding

Table XXXV

Percent of Married Women aged 45-54 Marrying for the First Time under 25 Years, Cross-Classified by Educational Attainment, Ethnicity, and Earnings of Head. Canada, 1941

	Percent Marrying Under Age 25		
	Educational Attainment		
	0-8	13+	Difference
Total	70.0	53.6	16.4
British	65.9	50.6	15.3
Other	72.9	56.5	16.4
-$950	72.7	58.2	14.5
+$2950	65.5	48.2	17.3
British, -$950	67.5	58.5	9.0
British, +$2950	65.0	44.0	21.0
Other, -$950	75.5	56.5	19.0
Other, +$2950	66.5	53.5	13.0

	Ethnicity		
	Other	British	Difference
Total	65.0	57.9	7.1
-$950	67.5	62.3	5.2
+$2950	60.3	54.2	6.1
0-8	72.9	65.9	7.0
13+	56.5	50.6	5.9
$950, 0-8	75.5	67.5	8.0
$950, 13+	56.5	58.5	2.0
$2950, 0-8	66.5	65.0	1.5
$2950, 13+	53.5	44.0	9.5

Table XXXV, Continued

	Earnings		
	-$950	+$2950	Difference
Total	65.7	57.3	8.4
0-8	72.7	65.5	7.2
13+	58.2	48.2	10.0
Other	67.5	60.3	7.2
British	62.3	54.2	8.1
0-8, Other	75.5	66.5	9.0
0-8, British	67.5	65.0	2.5
+13, Other	56.5	53.5	3.0
+13, British	58.5	44.0	14.5

Source: Dominion Bureau of Statistics (1946:30).

importance of the educational attainment variable is clear. Strong differentials in marrying age exist in terms of level of educational attainment for all variables, considered separately or jointly. However, differentials exist within each category of level of schooling also. For example, a differential of 12.5 percent can be found between British women with earnings of family head in excess of $2950 and Other women with earnings of family head lower than $950, even though both groups of women exhibited the same level of schooling. Such a differential suggests that the variables of ethnicity and earnings of family head are exerting a force independent of the educational attainment variable.

Interaction effects can be seen in the cross-

tabulations of ethnic origin with other variables. The differential between the ethnic groups of British and Other, holding educational level constant at 13 years and over and earnings of family head constant at less than $950, is in an unexpected direction. The Other group displays a somewhat later marrying age than the British group. This can be accounted for by the strong effect that education plays for Other women. The percent marrying under age 25 for women of Other ethnicity is markedly reduced as level of educational attainment increases. Similarly, the ethnic differential in marrying age more or less disappears for women characterized by high earnings of family head and low levels of schooling. The lack of a differential can be accounted for by the high percentage marrying under age 25 displayed by this group of British women, which again appears to be an effect of the education variable.

Differences within the British group and within the Other group are larger than the differences between the two groups. For both groups, the difference between women with less than 8 years of schooling and earnings of family head less than $950 and women with more than 13 years of schooling and earnings of family head in excess of $2950 is large, more than 20 percent. Thus, the effects of income and education, together, are greater than the effect of ethnicity.

The effect of the earning variable is intermediate

between the effect of the education variable and the effect of the ethnicity variable, in terms of magnitude. Here, also, the differential practically disappears in two comparisons: for British women with less than 8 years of education and for Other women with more than 13 years of schooling. In both cases, it is the education variable that accounts for the lack of a differential.

Thus, these data suggest that three variables operate together in determining age at marriage. The most important variable is educational attainment. Of somewhat lesser importance are the variables of ethnic background and earnings of family head. Differentials in the latter two variables can and do disappear, which generally can be accounted for by the action of the education variable. Yet, many remain strong, illustrating the importance of ethnicity and earnings as explanatory variables.

Relating these findings to the data concerning the trend of nuptiality in Canada, it can be suggested that the declines that occurred in the early decades of the twentieth Century in the percent of women single at ages 20-24 and 25-29 and the average age at marriage for women can, in some part, be attributed to the addition into Canada at this time of women exhibiting a complex of factors related to young age at marriage. The period of western expansion was characterized by an influx of population from eastern and southern Europe. These data suggest that, at least in the

case of women, the marriage pattern of that part of Europe was transferred to Canada. These women emigrated from parts of Europe in which the population was not well educated and one suspects that the emigrants were characterized by particularly low levels of educational attainment. Lastly, the historical role that immigrants have played in the Canadian economy is that of filling low paying jobs that "Canadians don't want." Therefore, Canada at this time was augmented by a population that was characterized by Other ethnic origins, low level of educational attainment and low earnings, the three factors that operated together to determine young age at marriage. The addition of this sub-population served to affect a younger age at marriage for the whole Canadian female population.

A second source of information concerning marriage differentials is the regular censuses from 1931 to 1971 which cross-tabulated age and marital status by two other variables, place of residence (rural and urban) and ethnic origin. These data, which indicate the timing and quantity of marriage for both women and men, are presented in Tables XXXVI and XXXVII.

Focussing first on the rural/urban differentials, it can be seen that the direction of the differential differs for males and females. In the case of men, the rural population is characterized by older age at marriage and higher levels of permanent celibacy than the urban

Table XXXVI

Percent Single at Ages 20-24, 25-29 and 45-49 for Males and Females. Rural and Urban Areas.[1] Canada 1931-1971

	Percent Single					
	Males			Females		
	20-24	25-29	45-49	20-24	25-29	45-49
1931						
Rural	87.1	55.3	17.1	55.8	23.8	7.1
Urban	83.9	49.4	11.5	68.2	37.7	12.4
1941						
Rural	85.8	52.9	17.0	53.5	24.6	7.1
Urban	81.9	47.2	12.0	65.7	38.0	13.8
1951						
Rural	79.4	40.8	16.2	40.3	13.9	6.9
Urban	71.3	32.0	11.3	52.2	23.7	14.0
1961						
Rural	74.9	35.5	13.8	34.7	11.4	5.7
Urban	67.2	27.5	9.0	42.3	16.8	10.8
1971						
Rural	70.9	26.5	12.2	37.0	10.0	4.3
Urban	66.8	25.4	8.2	44.9	16.7	7.7

[1]Definition of urban is inconsistent over censuses.

Sources: Censuses of Canada: 1931 (v. 3, table 13), 1941 (v. 3, table 7); 1951 (v. 2, table 1); 1961 (cat. 92-552, table 78); 1971 (cat. 92-730, table 1).

population. On the other hand, in the case of women, the urban population is characterized by older marrying age and higher levels of non-marriage at older ages than the rural population. To some extent, this phenomenon is the result of internal migration which tends to be female selective. Thus, lower nuptiality of the female urban population is the result of the fact that availability of mates is unfavourable for their marriage prospects. Similarly, rural men are affected by the out-migration of women as they face a woman shortage.

However important the sex ratio variable may be in determining rural/urban differentials in marriage pattern at any given time, it appears not to be an important variable in terms of the trend of nuptiality. In terms of age at marriage, the decade experiencing the greatest amount of change was 1941-1951. In both the rural and urban populations, the percent single at ages 20-24 and 25-29 registered significant declines. However, the sex ratio did not change appreciably. Rural males faced in 1951 a sex ratio as unfavourable to marriage prospects as in 1941,[3] yet the percent single at ages 20-24 decreased 6.4 percent and at ages 25-29, the decrease was 12.1 percent. For urban females, the sex ratio[4] was slightly more unfavourable in 1951, probably due to higher levels of migration after the war in the face of increasing job opportunities for women in the affluent post-war period. Despite this, the decrease in

the decade 1941 to 1951 in the percent single at ages 20-24 and 25-29 was 13.5 percent and 14.3 percent, respectively.

The rural/urban differentials in age at marriage and permanent celibacy continued to exist over the entire period from 1931 to 1971. For every decade, rural males exhibited lower levels of nuptiality than urban males; similarly, in every decade, urban females registered lower levels of nuptiality than rural females. However, the extent of the differential differed for men and women, with women displaying a larger rural/urban differential than men.

The extent of change in the percent single was similar in the rural and urban populations. Both sectors responded equally to the social and economic factors conducive to earlier marriage and reduced permanent celibacy. As a result, the extent of the rural/urban differential in percent single at each age group for both sexes was approximately the same in 1971 as it was in 1931.

However, rural/urban variation in the trend of decrease in the percent single for women aged 20-24 and 25-29 exists. In the decade 1941-1951, rural women experienced larger reductions in percent single than did urban women. For rural women, the percent reductions were 24.7 and 43.5 for ages 20-24 and 25-29, respectively; for urban women, the decreases were 20.5 and 37.6 percent. This differential reduction is important in its relationship with the fertility increase experienced between 1941 and 1951.

It will be recalled that the total fertility rate for rural women increased markedly over this decade while the total fertility rate for urban women did not. In part, this differential in the trend of total fertility can be attributed to differential marriage, as opposed to fertility, behaviour.

In more general terms, it can be said that rural/urban differentials in female nuptiality operated to affect rural/urban differentials in fertility. The younger age at marriage for rural women served to increase their fertility, as measured cross-sectionally, by affecting younger ages at childbearing.

Data concerning ethnic differentials in age at marrage and permanent celibacy are presented in Table XXXVII for the years that data are available. The data refer to four broad ethnic groups: the British groups; the French; western European groups, including the Scandinavians; eastern European groups, which include Italians. Asians, proportionately a small group in Canada, are excluded from the analysis because of severe sex ratio distortion, due in some part to Canadian immigration laws, which particularly affects the nuptiality of a group whose out-marriage possibilities have been greatly limited.

Focussing first on the extent of ethnic differentials, two facts become apparent. One, as was the case with the rural/urban differences, the magnitude of the

Table XXXVII

Percent Single at Ages 20-24, 25-29 and 45-49 for Males and Females by Ethnic Groups. Canada 1931-1961

	Percent Single					
	Males			Females		
	20-24	25-34	45-54[1]	20-24	25-34	45-54[1]
1931						
British	85.4	42.2	14.3	65.3	27.3	11.6
French	86.1	38.7	10.6	66.9	30.1	11.6
Western European	87.2	48.8	16.9	56.5	19.8	6.2
Eastern European	85.6	37.0	8.4	41.4	8.2	1.5
1951						
British	70.6	24.2	12.4	44.7	15.2	11.6
French	78.0	29.8	12.5	55.5	22.5	15.4
Western European	74.7	27.8	16.0	44.5	14.6	6.9
Eastern European	79.4	35.0	13.8	34.4	14.4	2.7
1961						
British	65.3	19.3	9.7	37.2	11.3	9.5
French	74.0	25.6	11.6	49.0	17.5	14.3
Western European	67.4	22.0	10.3	33.2	9.7	6.4
Eastern European	72.1	25.1	11.4	33.1	9.2	4.1

[1]45-64 in 1931.

Sources: Census of Canada: 1931 (v. 4, table 49); 1951 (v. 2, table 30); 1961 (cat. 92-558, table 106).

differentials is greater for women than for men. Two, a trend of convergence in ethnic differentials in marriage occurred, greater for women than for men, particularly in terms of age at marriage. For example, in 1931, there existed a 25.5 percent difference in percent single at ages 20-24 and a 19.1 percent difference at 25-34. By 1961, the respective differentials were 15.9 percent and 8.3 percent. However, different groups were responsible for the size of the differentials in 1931 as compared to 1961. In 1931, the large differential was in the main due to the high nuptiality of the eastern European women relative to the other ethnic groups. On the other hand, in 1961, eastern European women did not display significantly higher levels of nuptiality. Rather, the 1961 differential was due to the relatively high levels of percent single registered by French Canadian women. Excluding French Canadian women from the analysis, the differential in 1961 is extremely small: 4.1 percent for the age group 20-24 and 2.1 percent for the age group 25-34.

This fact suggests that the trend in percent single over the period from 1931 to 1961 differed rather markedly for the ethnic groups. Indeed, the ethnic groups did register differing amounts of change in percent single over the time period. Women of British ethnic origin displayed the largest reductions in percent single at all ages. They were followed by women of western European origin. The

experience of women of eastern European origin was quite different. They displayed increases in percent single at ages 25-34 and 45-54 and only a small decrease at ages 20-24. In the period from 1931 to 1951, when the reduction in percent single at ages 20-24 was particularly marked for all other groups of women, the eastern European women registered an increase of approximately 4 percent. It appears that eastern European women were engaged in a process of shedding themselves of their traditional marriage pattern, which, as we have seen, was characterized by young age at marriage and virtually universal marriage. In 1931, they displayed the essentials of this pattern: by 1961, they displayed a "Canadian" marriage pattern. In so doing, they were relatively immune to the trend of reduction in percent single that characterized the other groups of women in Canada.

The case of the French women was different again. They, in 1931, did not exhibit percents single that were different than British women in any major way. Also, they exhibited the general pattern of decline, at least for the age groups 20-24 and 25-34. Their deviation in 1961 results from the fact that the reductions they displayed were not large, particularly as compared with British and western European women in the age group 20-24. Thus, although French women displayed a trend toward younger age at marriage, it was a relatively small change.

The trend in extent of permanent celibacy from 1931 to 1961 was similarly diverse for the different groups of women. Only British women displayed a reduction in the percent single at ages 45-54. The French and eastern European women registered increases of similar magnitude, approximately 2.5 percent, but from widely differing levels in 1931.

The conclusion that can be drawn concerning ethnic marriage patterns for women is that a convergence has occurred. In 1931, a clear line can be drawn between the nuptiality of women of all western European origins, on the one hand, and women of eastern European origin, on the other, a line corresponding to the distinction between western and eastern European marriage patterns, as brought to light by Hajnal (1965). By 1961, the line had disappeared in the light of the differential amounts of change in nuptiality experienced by the two groups. This observation provides support for the argument that a Canadian marriage norm emerged during the course of the twentieth Century. However, a certain qualification must be made. The percent single at all age groups for British, western European and eastern European women in 1961 was extremely similar. French women stand out in that year for their relatively high levels of the percent single. The former groups of women have been assimilated, for the most part, in what could be called Anglo-Canadian culture

whereas the French women exist apart in a separate linguistic and cultural milieu, geographically separated from their English-speaking counterparts. It could be argued that two separate norms concerning marriage have emerged, one in Anglophone Canada and one in Francophone Canada. However, the opinion offered here is that sufficient grounds do not exist for such an argument. A counter-argument can be made on the following grounds. One, the differential that exists in 1961 is not all that large; it is 10 percent smaller than the differential at ages 20-24 and 25-34 in 1931. Two, the trend in nuptiality for French women at ages 20-24 and 25-34 from 1931 to 1961 displayed decreases that are generally comparable with that experienced by British women and western European women. Three, the percents single displayed by French men in 1961 do not differ in any significant way from that of men of other ethnic origins in Canada. If a separate French Canadian norm concerning marriage had emerged, we would expect it to surface for French men as well as French women.

Looking at ethnic differentials in male nuptiality, it has already been pointed out that they are smaller than in the case of females. There is no clear-cut trend of convergence simply because there existed relatively little variation to start with. Nevertheless, in 1961, the ethnic differentials in percent single are smaller for men than for women at all ages.

The differential that does exist in 1931 points to the higher levels of nuptiality experienced by eastern European males, particularly in terms of lower levels of permanent celibacy. By 1961, eastern European men no longer distinguished themselves in terms of higher levels of nuptiality. In 1931, British and western European men exhibited the highest levels of percent single; by 1961, they displayed the lowest. Therefore, as was the case with women, there existed ethnic differentials in the extent of change in the percent single over time. The greatest decreases were experienced by men of British and western European origins. Lesser decreases, approximately equal in magnitude, were displayed by French and eastern European males. These latter two groups experienced some increases in percent single at ages 45-54.

Therefore, the same general observations concerning ethnic differentials in nuptiality can be made for males as for females. Eastern Europeans discontinued exhibiting relatively low levels of percent single; the largest reduction in percent single was experienced by the British and western European groups; by 1961, ethnic differentials in levels of the percent single were relatively small in magnitude.

The data concerning ethnic differentials in female nuptiality, both in terms of level and trend, are important in their relationship with ethnic patterns of fertility

behaviour. The low total fertility rate for women of British ethnicity in 1931 can be, at least in part, attributed to low nuptiality levels. Similarly, eastern European women in 1931 exhibited a high total fertility rate in conjunction with high levels of nuptiality. Women of western European origins displayed intermediate levels of fertility and nuptiality. This relationship between fertility level and nuptiality level, however, does not hold up for women of French ethnic background. They were characterized, in 1931, by a high level of total fertility rate in conjunction with low nuptiality. In the case of French women, then, the mechanism of Malthusian limitation was used to the exclusion of non-Malthusian control.

Between 1931 and 1951, the total fertility rate for women of British origin and women of western European origin increased, as did their nuptiality. For eastern European women, nuptiality and fertility decreased. A declining total fertility rate characterized women of French origin, accompanied by some increases in nuptiality, although small compared with the increases experienced by British-origin women.

Thus, for groups other than French, level of fertility rate and level of nuptiality are directly related. Similarly, change in fertility and nuptiality go hand in hand for the period between 1931 and 1951. As a result of convergence in marriage behaviour, decreased variation in

fertility occurred.

A trend toward convergence in nuptiality can be seen in data concerning provincial levels of age at (first) marriage, as shown in Table XXXVIII. For both men and women, an age span of more than 5 years in average age at marriage existed at the end of the nineteenth Century across the provinces. By 1971, the age range in provincial variation had narrowed to 1.1 years for men and 1.5 years for women. The provinces tended to exhibit the same trend over time, with slight reductions occurring in the early decades of the present century, marked by some increase in the depression year of 1931, with major reduction occurring after 1941. Convergence can be accounted for by the larger reductions in average age at marriage in the provinces that initially displayed relatively old ages at marriage, generally the provinces in the west, in the case of men, and the provinces in eastern Canada, in the case of women.

The wider range of provincial variation in the years spanning the turn of the century was largely due to the marriage pattern exhibited in the western provinces, particularly for women. That pattern, of younger age at marriage for women, was largely due to two factors: sex ratio distortion highly favourable to marriage for women, and the ethnic background of the women residing in these provinces. Throughout the course of this century, the sex ratio became normalized and ethnic differentials in marriage

Table XXXVIII

Average Age of (First) Marriage[1] for Males and Females. Provinces, 1891-1971

	Average Age							
	1891	1911	1921	1931	1941	1951	1961	1971
Males								
Newfoundland	-	-	-	-	-	24.4	23.6	22.9
Prince Edward Island	31.1	31.0	30.0	29.7	26.4	25.1	23.3	23.1
Nova Scotia	30.1	29.5	28.7	28.7	25.6	24.8	23.3	23.1
New Brunswick	29.4	28.8	27.7	28.2	25.6	24.4	23.3	22.9
Quebec	27.5	27.4	27.3	28.5	26.8	25.1	24.6	24.0
Ontario	29.3	28.8	27.7	28.0	25.8	24.4	23.8	23.5
Manitoba	29.8	29.5	28.5	29.3	26.5	25.0	23.9	23.2
Saskatchewan	-	30.6	29.1	29.2	26.3	25.2	23.9	22.8
Alberta	-	30.7	29.2	29.0	26.3	24.8	24.0	23.1
British Columbia	32.7	31.5	28.5	29.1	26.8	24.9	24.2	23.5
Range	5.2	4.1	2.7	1.7	1.2	.7	1.3	1.1
Females								
Newfoundland	-	-	-	-	-	21.3	20.5	20.6
Prince Edward Island	27.9	27.8	26.5	25.7	22.8	21.6	21.0	21.5
Nova Scotia	26.4	25.7	24.8	24.9	22.4	21.6	20.6	21.1
New Brunswick	26.3	25.4	24.3	24.7	22.0	21.0	20.6	20.8
Quebec	25.3	25.1	25.1	26.4	23.9	22.6	21.9	22.0
Ontario	26.6	25.8	24.7	24.9	22.7	21.9	21.1	21.3
Manitoba	23.8	24.2	24.0	25.2	23.0	21.9	20.9	21.0
Saskatchewan	-	22.3	22.4	23.8	22.4	21.7	20.7	20.5
Alberta	-	22.8	22.6	23.6	22.2	21.6	20.7	20.7
British Columbia	22.3	23.7	23.8	24.8	23.3	22.1	21.2	21.0
Range	5.6	5.5	4.1	2.1	1.9	1.6	1.4	1.5

[1]Figures for 1891-1931 are computed singulate mean ages at (first) marriage; figures for 1941-1971 are median ages at (first) marriage.

Sources: Censuses of Canada: 1891 (v. 4, table H); 1921 (v. 2, table 29); 1931 (v. 3, table 12).
Vital Statistics: 1971 (v. 2, table 7).

behaviour tended to disappear. Thus, by 1971, women in the western provinces displayed average ages at marriage that were in line with the other provinces.

Attention can now be turned to an explanation of why levels of nuptiality increased in the twentieth Century, particularly in the period after 1941 which registered large decreases in the percent single and a substantial reduction in average age at marriage. Put in another way, why was there a turning away from the European marriage pattern?

There are a few variables that we can reject, given our discussion of marriage differentials. Increasing urbanization cannot be responsible, at least in the case of the observed decreases in percent single for women, for its effect, given the rural/urban differential discussed, would be to increase the percent single for women. Also, the variable of ethnicity can generally be discarded. Although the decreases in the percent single in the early years of this century may be accounted for, in part, by the influx of people from areas characterized by non-European levels of nuptiality, it has been shown that ethnic differentials have tended to disappear.

It will be recalled that, at least for married women in 1941, one important determinant of age at marriage was level of educational attainment, with younger marrying age associated with low levels of schooling. It is suspected that, if the data were available, a similar differential

would emerge in 1971. However, through the course of this century, levels of educational attainment have increased and levels of the percent single at all ages have decreased. These two trends do not "fit," given the apparent effect of education on marriage. The forces conducive to younger age at marriage must have affected people at all levels of educational attainment to a greater extent than the differential effect of education per se. In similar anomalous fashion, the period from 1941 has been marked by the increasing labour force participation of women. To the extent that female labour force participation offers alternatives to marriage, we would expect increases, rather than decreases, in the percent single in the post-1941 period.

We can consider educational attainment and female labour force participation as variables affecting the desirability of marriage. Presumably, increases in either variable would create a situation in which marriage was less desirable, at least from the point of view of women, in that alternatives to marriage exist. However, marriage must not be viewed in terms of desirability alone: feasibility of marriage is similarly important (Dixon, 1971). One factor leading to increased feasibility of marriage, and therefore decreased levels of the percent single, is increased female labour force participation. Marriage can occur at earlier ages if two incomes contribute to the setting up of the

household, in other words.

A number of factors have operated to increase the feasibility of marriage in the years since 1941: the general affluence of the Canadian population; increased labour force participation of women, as mentioned; the ability to combine educational pursuits with marriage, as aided by student loans, student married living quarters, and financial assistance from parents who can more readily help than in the past. One factor that cannot be discounted is the increased ability to control fertility. Marriage is more feasible at younger ages when pregnancy does not necessarily immediately follow. It has been argued that the European marriage pattern was oppressive, the product of economic constraints (van de Walle, 1968:499). It was relinquished when the economic constraints were lifted, i.e., when marriage became more feasible. Control of fertility within marriage was one factor serving to affect that end.

Thus, in this view, declines in the percent single and declines in the average age at (first) marriage were the result of a number of factors that combined to make marriage more feasible within the dictates of western family organization. There also existed factors whose potential effect could have been to decrease the desirability of marriage, particularly for women. However, a wide gap exists between potential effect and actual effect, a gap

that is mediated in large part by the perceptions of the social actors. Canadian women have continued to perceive marriage as a desirable goal, in the face of increased alternatives to that goal. Whether the slight reversal of the trend of increased nuptiality that occurred in the decade 1961-1971 for women signals changed perception and changed behaviour, or whether it merely reflects the "marriage squeeze," remains to be seen.

This chapter has attempted to delineate the chief characteristics of marriage and marriage change in Canada, from a comparative perspective. It has been seen that marriage in Canada, in terms of levels of, and trends in, timing and quantity closely approximated that of western Europe. In the nineteenth Century, Canada may be placed in the European "camp" in terms of marriage pattern. Possible explanations for this pattern of relatively old age at marriage and high levels of permanent celibacy have been provided. The European pattern was viewed within a framework focussing on the desirability and feasibility of marriage, within the context of the structure of western family organization and family-related norms. Special attention was given to the effect of migration on nuptiality, given the role that migration has played in Canada. Differentials in marriage within Canada were also examined. Convergence was found suggesting that a norm concerning marriage, particularly age at marriage, has emerged within

Canadian society throughout this century. Nuptiality differentials and trends were examined in their relationship with variations and trends in total fertility rate. It was found that nuptiality variation was directly related with fertility variation. Last, the recent, i.e., post 1941, changes in marriage were examined and an attempt was made to explain the reduction in the percent single and average age at (first) marriage. Again, the explanation utilized a framework focussing upon marriage feasibility and desirability.

Footnotes

[1]It is possible to perform an analogous analysis for the quantity of marriage, i.e., measure the effect of sex ratio change on the percent single at ages 45-49. However, because the percent single in the age group 45-49 reflects the action of demographic, and other, factors at an earlier time period and because, in Canada, for some portion of the population, that earlier time period was not spent in Canada, this analysis was not performed given the interpretation problems that would be incurred.

[2]A certain caution is necessary in interpreting these differentials. The independent variables refer to characteristics exhibited in 1941 whereas the dependent variable, percent marrying before age 25, refers to behaviour at an earlier time. To the extent that change has occurred in the characteristics of women over the time period between age at marriage and 1941, interpretation becomes problematic. In this regard, two of the variables are particularly suspect: place of residence and earnings of family head. Given urbanization, it is likely that some portion of women living in urban areas in 1941 resided in rural areas (in Canada and elsewhere) at the time of marriage. The effect of such movement would be to mask any rural/urban differential in age at marriage. It is suspected that a differential exists, with urban women marrying at older ages than rural women, given the experience of other western populations (Knodel and Maynes, 1976). Similarly, there is no guarantee that relative earnings of head did not change significantly between the time of marriage and 1941. The variables of educational attainment and ethnicity are less problematic in terms of potential change over time. Although the possibility of raising level of educational attainment after marriage exists, it is probably safe to say that for the majority of women at this time period, marriage and formal education are mutually exclusive. Ethnicity, as an ascribed characteristic, remains constant over time.

[3]The sex ratio in 1941 and 1951 in rural areas was 116.9 males per 100 females aged 15-29 and 116.3 males per 100 females aged 15-29, respectively (Censuses of Canada: 1941, v. 3, table 7; 1951, v. 2, table 1).

[4]The sex ratio in 1941 and 1951 in urban areas was 90.8 males per 100 females aged 15-29 and 88.8 males per 100 females aged 15-29, respectively (Censuses of Canada: 1941, v. 3, table 7; 1951, v. 2, table 1).

CHAPTER VI

MARITAL FERTILITY

This chapter examines trends and differentials in marital fertility, the variable that exerted the greatest impact on national fertility level and trend. Attention is paid to the issues of availability of contraceptive means and the age structure of marital fertility decline in their relationship with motivation to control fertility within marriage. Also focussed upon are changes in average completed family size and in the distribution of family sizes. Differentials in children ever-born in terms of such variables as age at marriage, place of residence, income, religion, ethnicity, and educational attainment are examined, with the aim of assessing the crucial variables determining level of marital fertility and the extent that these variables are differentially important over time. The data presented in this chapter were obtained from Canadian Vital Statistics and from the Canadian Censuses of 1941, 1961, and 1971, which provide information on number of children ever-born per ever-married woman.

It will be recalled that marital fertility declined continuously from 1871 to 1971, with a slight interruption

in 1941-1951. One, but only one, of the prerequisites for a sustained decline in marital fertility (control of births within marriage) is knowledge and availability of effective techniques of fertility control.

In terms of availability, Canadian law has been restrictive. Legislation concerning contraception was enacted in 1892, as part of the Criminal Code dealing with Offenses Against Morality. The law did not make the use of contraception illegal; rather, the sale, distribution, and advertisement of contraceptive products were viewed as criminal acts. The Canadian emphasis upon the prohibition of advertising did not differ from the legal stance taken by Great Britain (Indecent Advertisements Act of 1889) and the United States (Comstock Laws of 1873).

The Canadian law reads as follows:

> . . .everyone commits an offense who knowingly, without lawful justification or excuse . . . offers to sell, advertises, publishes, any advertisement of, or has for sale or disposal any means, instructions, medicine, drug or article intended or represented as a method of preventing conception or causing abortion or miscarriage. (quoted in Dickens, 1975:552)

It remained unchanged until 1969, when a number of alterations were made. The phrase "preventing conception or" was withdrawn, thus removing from the Criminal Code, the acts of selling, distributing, and advertising non-abortive contraceptive products and literature. However, these remain under legal regulation, housed within the federal Food

and Drugs Act. This shift has meant a considerable relaxation in the availability of contraception; however, controls do remain. Another change instituted at this time was the legalization (i.e., removal from the Criminal Code) of therapeutic abortion.

Although legal change did not occur until 1969, it should not be concluded that information and products were unavailable prior to that time. It appears that breaches of the law were common since the late 1950's, at which time contraceptives were available in drugstores and physicians prescribed such items as pills, diaphragms, and IUDs (Swinton, 1974:12). Before that time, more difficulty in gaining access to products and information was encountered. Yet, certain avenues were open. It seems likely that a "black market" in contraceptive devices existed. Also, voluntary agencies in Canada have been active in family planning, albeit on a small scale, since 1932, when a birth control clinic in Hamilton, Ontario commenced operation. Perhaps the most accurate statement that can be made about the Canadian law concerning contraception, as it existed from 1892 to 1969, is that it operated less as a mechanism to ensure complete inaccessibility to birth control information and devices than it did to create inequities in accessibility. The knowledge and means to control fertility were more available to that segment of society that could afford private physicians or, in an earlier day, could

afford "black market" prices and was educated and informed about voluntary facilities.

Given the Church's professed role of teacher of morality, and the legal formulation of contraception as a moral issue, the connection between religion and contraception in Canada is a close one. The law, when it was enacted in 1892, had the full support of the Church, both Catholic and Protestant. During the course of the twentieth Century, the Protestant and Catholic Churches diverged in terms of support of the law. The United Church of Canada took an official stand against the prohibition of contraception in 1936 (Thompson, 1974:45), following, not coincidentally, the Anglican Lambeth Conference of 1930 that conceded the moral legitimacy of contraception under certain conditions, recommending abstinence as the preferred means but accepting other methods as well. The position taken by the Lambeth Conference in 1930 differed markedly from the position of that same Conference just ten years earlier, in 1920, which had been one of condemnation of contraception as unnatural and dangerous on physical, moral, and religious grounds (St. John-Stevas, 1971:74). This quick reversal in the Anglican position must be viewed in the context of the particular decade involved. By 1930, the depression was under way and one cannot but suspect that the exigencies of the day hastened the change in official attitude. The Protestant emphasis upon personal freedom and individual

responsibility probably operated to facilitate the change in stance, once the initial attitudinal barriers had begun to break down.

While the United Church of Canada altered its official stand concerning contraception in 1936, the Canadian Catholic clergy did not do so until 1966 (St. John-Stevas, 1971:323n). The later change on the part of the Canadian Catholic clergy was a result of the official Vatican condemnation of artificial contraception as contrary to God's will and to the fundamental nature of marriage. However, it should be noted that the Canadian Catholic clergys' position concerning the 1968 Papal Encyclical, reaffirming Catholic non-acceptance of contraception, was negative. Thus, by the mid 1960s, the Canadian Catholic and Protestant Churches were again in general agreement concerning contraception. Also, it will be noted that, in the case of both Churches, attitudinal change preceded legal change.

Given an unfavourable situation in terms of availability of contraception, the continuous decline in marital fertility from 1871 is noteworthy. Some information exists, in the form of human sexuality manuals which were circulated in Canada around the turn of the Century, as to the means by which marital fertility was lowered (Bliss, 1970). The manuals viewed abstinence and *coitus interruptus* as the preferred means. Abortion was

known, and likely practised, as the manuals warn against its use on moral and health grounds. The rhythm method was not unknown, but the description of it was incorrect in terms of the timing of the "sterile" time of the menstrual cycle. The condom was available to some extent but its acceptability seems to have been far from total. One physician wrote:

> It is said by those who have experience, that the use of this covering is sometimes followed by symptoms and feelings resembling those which follow self-abuse: and indeed the whole operation differs but little from masturbation. (An American Physician, 1974 (1855):45).

Also, douching was a technique assumed to function to limit fertility. Nevertheless, abstinence was generally conceived as the preferred technique.

Prevailing doctrines concerning sex and sexuality, held by clergymen, physicians, and other "sex experts," dictated the preference for abstinence, as a fertility control behaviour, and for other reasons as well. Human sexuality manuals revealed an overriding concern with the issue of sexual excess in married life. The recommended maximum frequency of sexual intercourse seems to have varied between "once a month" and "once a week" (Bliss, 1970:93). Two "theories" lay behind the directives against excessive sexual intercourse. One source was the concept of reproduction as the chief purpose of marriage. Thus, any sexual activity aimed at non-procreative purposes

was immoral, attacking the very basis of the conjugal tie. This was the chief argument against contraception. A second source was the concept of vital energy prevalent in the nineteenth Century. Each human being possessed a limited amount of vital energy, the preservation of which was necessary for physical and psychological well-being. As sexual activity diminished this non-renewable vital energy, it should be engaged in only sparingly (Bliss, 1970:100-1). Given this general outlook towards sexual matters in the late nineteenth and early twentieth Centuries, it can be suggested that, to the extent that attitudes determine behaviour, abstinence played a major role in the marital fertility decline.

It seems likely that the sustained decline in marital fertility was accomplished through the combined use of abstinence, *coitus interruptus*, and abortion. Given the dangers attendant upon abortion, when it is illegal and often performed by untrained people, and the deprivations involved with abstinence and withdrawal, it can be suggested that the motivation to control family size was high, starting in the late nineteenth Century.

The finding of sustained marital fertility decline in a legal and religious atmosphere that discouraged it by making unavailable all but the most difficult contraceptive methods has both theoretical and practical implications. On the theoretical level, it lends support to the

"motivational" school of thought that sees the primary causal influences on family size as located in the structure of reproductive incentives, both economic and non-economic, as opposed to the "technological" school that argues that availability of "easy" contraceptive techniques is the predominant factor involved (Blake and Das Gupta, 1975:229-30). On the practical level, this finding suggests that efforts to reduce marital fertility in contemporary developing countries be concentrated on altering the system of reproductive motivation rather than on increasing the availability of family planning services and methods. This is not to suggest that family planning services are unnecessary or be abandoned, but rather that their role be a secondary and reinforcing one.

Canada was not unusual in accomplishing marital fertility control through the use of methods requiring high levels of motivation. For example, data concerning marital fertility control in Britain indicate that *coitus interruptus* was the major method of birth control that couples in 1960 who had married during the 1930s had used during their married life. Even amongst couples married in the 1950s, withdrawal was a popular method, second only to the condom (Pierce and Rowntree, 1961:127). These British data support the argument that motivational factors are predominant over technological ones in the determination of family size behaviour.

The age structure of marital fertility decline can shed some light on the motivational context of fertility control in Canada. Data on age-specific marital fertility, available from Vital Statistics publications for the period from 1921 to 1971, are presented in Table XXXIX. For each year, they indicate the expected pattern of high marital fertility occurring at young ages, with sharply reducing rates with increased age. The pattern, universally observed, is partially a function of physiological factors associated with age, as the fecundity of women decreases steadily after age 30 to the end of the childbearing years. It also reflects, in a population practicing fertility control, a structure of preference which dictates that childbearing occur early in married life.

The pattern of change in marital fertility rates differed by age over the period. The groups over age 35 experienced continuous and substantial reductions in every decade from 1921 to 1971. In the decade 1941-1951, when general marital fertility rose, only the four youngest age groups registered increases, with only the age group 15-19 exhibiting an increase in excess of 5 percent. Thus, the "baby boom" following World War II reflected higher marital fertility at young ages only and not a general recovery in marital fertility at all ages. Heightened marital fertility at younger ages continued in 1961, in spite of a decline in general marital fertility rate. It was not until the decade

Table XXXIX

Age-Specific Marital Fertility Rates, Canada,[1] 1921-1971

	Rates at Ages:							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Mean Age of Childbearing
1921[2]	500.6	423.1	321.8	240.4	162.8	74.4	10.2	25.8
1931[2]	512.2	379.6	273.8	192.1	130.8	55.8	6.8	25.1
1941[2]	464.4	349.9	244.7	162.9	102.1	40.0	4.6	24.7
1951	498.5	350.4	248.1	168.7	100.6	36.6	3.7	24.4
1961	541.2	374.4	255.6	161.4	89.9	32.1	2.8	24.0
1971	360.1	221.4	166.6	84.9	36.3	10.2	.7	23.2
	Percent Change:							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1921-31	+2.3	-10.3	-14.9	-20.1	-19.7	-25.0	-33.3	
1931-41	-9.3	-7.8	-10.6	-15.2	-21.9	-28.3	-32.4	
1941-51	+7.3	+.1	+1.4	+3.5	-1.5	-8.5	-19.6	
1951-61	+8.6	+6.8	+3.0	-4.3	-10.6	-12.3	-24.3	
1961-71	-33.5	-40.9	-34.8	-47.4	-59.6	-68.2	-75.0	
1921-61	+8.1	-11.5	-20.6	-32.9	-44.8	-56.9	-72.5	
1921-71	-28.1	-47.7	-48.2	-64.7	-77.7	-86.3	-93.1	

[1]Excludes Newfoundland.

[2]Excludes Yukon and Northwest Territories; rates adjusted for under-enumeration.

Sources: Vital Statistics: 1921 (table 4); 1931 (table 26); 1941 (table 35); 1961 (table B7); 1971 (Preliminary Annual Report, table 5). Henripin (1972:372). Canadian Censuses: 1921 (v. 2, table 29); 1931 (v. 3, table 12); 1941 (v. 3, table 7).

1961-1971 that marital fertility declined at all ages, although even then greater reductions occurred at older ages.

It can be concluded that a downward shift in age of legitimate childbearing occurred. Calculations of the mean age at childbearing for married women, as shown in Table XXXIX, indicate a steady decline from 25.8 years in 1921 to 23.2 years in 1971. In 1921, the ratio of the marital fertility rates of women aged 20-24 to women aged 35-39 was 2.6; in 1971, it was 6.1. This changing ratio reflects the greater reduction in marital fertility registered for older women relative to younger women and implies that childbearing became progressively concentrated in the younger age groups.

The pattern of change in the age structure of marital fertility is important for a number of reasons. Given the association between level of marital fertility and age, the fact of smaller reductions at the younger ages operated to hamper the trend of overall marital fertility decline. Also, in terms of fertility control behaviour, it suggests that the motivation to control fertility first appears among women at older childbearing ages who have already attained their desired family size. Later, fertility control behaviour spreads to women in the younger age groups, as the large reductions in these age groups in 1961-1971 suggest. However, diffusion of behaviour does not

necessarily imply diffusion in intention. In the case of older women, we can be quite confident that fertility control is attempted with the aim of averting further births. However, when fertility control occurs among younger women, the intention may be either to avert or to postpone births. It can be suggested that the motivational context of marital fertility control in Canada has undergone significant change - from a behaviour motivated after a given family size has been attained to a behaviour motivated before or during the childbearing career. This shift signals a change in the preference for children early in marriage.

Period fertility rates, i.e., rates referring to fertility in a given year, do not yield information concerning the fertility experience of a group of women as they move through their reproductive careers. Also, period rates are subject to short-term fluctuation. The Canadian Censuses of 1941, 1961, and 1971 provide information on the number of children ever-born per ever-married woman, by age, that allow us to examine the marital fertility experience of various groups of women over their lifetimes. Although these data provide useful information, they must be used cautiously. One difficulty surrounds the fact that the fertility experience is not completed until approximately age 45. Any comparisons of children ever-born per ever-married woman for women younger than age 45 yield

interpretative problems as both timing differences and differences in eventual completed family size are involved. Also, when tracing the fertility experience of a specified group of women over censuses, the factors of mortality and migration cause distortion. For example, women aged 30-34 in 1961 and women aged 40-44 in 1971 are not groups containing exactly the same individuals. Some of the women aged 30-34 in 1961 died before 1971, and some emigrated. Also, the group of ever-married women aged 40-44 in 1971 will contain some women who immigrated to Canada during 1961-1971. To the extent that the fertility experience of migrants differs from that of non-migrants, and to the extent that mortality is selective of any type of fertility performance, any comparison will be affected.

Data on children ever-born per ever-married woman, by age of women in 1941, 1961, and 1971 are presented in Table XL. Focussing first on women whose childbearing was completed just prior to each census year, it can be seen that completed family size was reduced from 4.2 in 1941 (ever-married women aged 45-54) to 3.3 in 1971 (ever-married women aged 45-49), a reduction of approximately one child. Also, in each census year, within the group of women aged over 45, reductions in completed family size with decreased age can be observed.

If the completed family size of women aged 40-44[1] in 1971, women whose chief childbearing years spanned 1947-

Table XL

Children Ever-Born per Ever-Married Woman, by Age of Women. Canada, 1941, 1961, 1971

	Children Ever-Born		
Age	1941[1]	1961	1971
15-19	.5	.7	.6
20-24	1.0	1.3	.9
25-29	1.6	2.2	1.7
30-34	2.4	2.8	2.6
35-39	3.2	3.1	3.2
40-44	3.8	3.2	3.3
45-49	4.2[2]	3.1	3.3
50-54		3.2	3.2
55-59	4.4[3]	3.4	3.0
60-64		3.7	3.1
65-69	4.8[4]	4.0[4]	3.2
70+			3.7

[1]Excludes Newfoundland.

[2]Ages 45-54.

[3]Ages 55-64.

[4]Ages 65 and over.

Sources: Dominion Bureau of Statistics (1944:52), Canadian Censuses: 1961 (cat. 98-508, table H1); 1971 (cat. 92-718, table 24).

1965,[2] or the "baby boom" years, is compared with that of women aged 50-54 in 1961, women whose chief childbearing years were 1927-1945, the figures are 3.3 and 3.2, respectively. This difference is much smaller than expected, especially considering that the latter group of women spent a large part of their fertile years during the depression and World War II. Therefore, the "baby boom" did not result in significantly larger family size in Canada. Data on children ever-born per ever-married woman in the younger age groups in 1941 and 1961 provide a hint as to the nature of the "baby boom." For each age group up to age 35, children ever-born was higher in 1961 than in 1941, implying a trend towards earlier childbearing. As completed family size did not increase, it can be inferred that childbearing was completed at earlier ages as well. For instance, women aged 45-49 in 1961 had completed only 75 percent of their childbearing by ages 30-34, whereas women aged 40-44 in 1971 had completed 85 percent of their eventual issue by ages 30-34.

All western populations experienced a trend toward younger childbearing during the post-war years, and, in this respect, the Canadian experience was typical. However, the trend of decrease in age of childbearing was generally accompanied by an increase in completed family size. For example, in the United States, ever-married women aged 40-44 in 1971, women whose chief childbearing years spanned the

"baby boom" years of 1947-1965,[2] bore an average of 3.2 children whereas ever-married women aged 50-54 in 1971 bore an average of 2.7 children (Ryder, 1971:101). Thus, Canada was distinctive in experiencing no increase in completed size during the "baby boom" years. However, it will be noted that the lack of a significant increase in Canada can, at least in part, be attributed to the relatively higher levels of completed family size in Canada prior to the commencement of the "baby boom."

While children ever-born increased at all ages under 35 in Canada from 1941 to 1961, the period from 1961 to 1971 was marked by decreases at these younger ages. As women aged 15-34 in 1971 have yet to complete their childbearing years, it is difficult to say whether the observed reductions reflect postponed or averted births, or some combination. If postponement is occurring, which does seem likely, it can be suggested that completed family size will be lowered, perhaps unintentionally, as women "age" out of the years of high fecundity.

It would be expected that change in average number of children ever-born would be accompanied by change in the distribution of family sizes. Table XLI presents data, for 1941, 1961 and 1971, on the percentage distribution of ever-married women by number of children ever-born. Given the observed decrease in completed family size, it is anticipated that the percent of women bearing a large number

Table XLI

Percent of Ever-Married Women by Number of Children Ever-Born and Age of Women. Canada, 1941, 1961, 1971

		Number of Children:			
	Birth Cohort	0	1	2-3	6+
1941[1]:					
15-19	1922-1926	56.0	36.0	7.8	-
20-24	1917-1921	38.5	35.4	23.3	.2
25-29	1912-1916	26.5	28.7	32.6	2.7
30-34	1907-1911	18.2	21.8	35.6	9.9
35-39	1902-1906	14.2	16.6	33.9	18.3
40-44	1897-1901	12.7	14.1	31.2	24.1
45-54	1887-1896	12.3	12.2	28.8	28.0
55-64	1877-1886	13.2	11.2	25.9	31.1
65+	-1876	12.9	9.3	22.1	40.2
1961:					
15-19	1942-1946	42.3	44.4	13.0	-
20-24	1937-1941	26.3	34.7	34.9	.4
25-29	1932-1936	13.6	21.0	48.4	3.6
30-34	1927-1931	9.7	14.0	47.7	9.2
35-39	1922-1926	9.2	12.4	44.5	14.3
40-44	1917-1921	10.1	12.3	40.1	16.6
45-49	1912-1916	13.1	15.1	39.3	16.4
50-54	1907-1911	15.3	15.8	36.2	19.0
55-59	1902-1906	15.5	15.0	33.4	23.5
60-64	1897-1901	14.6	13.7	31.8	26.6
65+	-1896	13.0	12.1	29.3	30.5
1971:					
15-19	1952-1956	49.7	41.2	8.3	.3
20-24	1947-1951	42.0	33.5	23.1	.2
25-29	1942-1946	20.7	24.3	46.6	1.1
30-34	1937-1941	9.4	12.8	53.6	3.2
35-39	1932-1936	7.4	9.4	47.2	10.9
40-44	1927-1931	8.2	9.8	42.7	14.3
45-49	1922-1926	9.6	11.3	41.6	15.1
50-54	1917-1921	11.8	13.1	40.4	14.8
55-59	1912-1916	14.5	14.8	38.5	14.3
60-64	1907-1911	16.6	15.9	35.3	15.8
65-69	1902-1906	16.7	15.4	33.2	18.0
70+	-1901	14.1	13.3	31.0	23.3

[1]Excludes Newfoundland.

Sources: Dominion Bureau of Statistics (1944:52). Canadian Censuses: 1961 (cat. 98-507, table G1); 1971 (cat. 92-718, table 24).

of children, defined as 6 or more, would decrease. This expectation is realized: 23 percent of women aged 70 and over in 1971 bore 6 or more children whereas only 15.1 percent of women aged 45-49 in 1971 did so. Comparable trends can be observed in the 1941 and 1961 data. It might be anticipated that reductions in average completed family size imply increases in childless and one-child families. However, such was not the case: the percent of ever-married women bearing no children and one child only registered general decreases for women of completed family size ages in both 1961 and 1971. Also, the percent of women completing childbearing with 2 or 3 children rose substantially. Thus, the trend of decreased completed family size was paralleled by a trend of convergence in number of children ever-born, which centered on the 2 or 3 child family. Both very large and very small family sizes were being rejected.

The issue of childlessness is one requiring further examination, given that its causes are two-fold, both voluntary or involuntary. It has been estimated that the incidence of involuntary childlessness, i.e., sterility, among Canadian women aged 30-44 in 1961 was approximately 5 percent and that some decrease has occurred over time (Veevers, 1972:273). It can be seen from Table XLI that the incidence of childlessness among women in the ages of completed family size in 1941, 1961, and 1971 was

significantly larger than this figure of 5 percent. Even allowing for increases in sterility as one moves back in time, it can be concluded that, throughout the entire twentieth Century, childlessness has been a pattern of behaviour that some portion of Canadian women have deliberately chosen. Indeed, Veevers (1972:273) estimates that approximately 50 percent of childlessness can be attributed to voluntary or psychological factors, and that this proportion has remained relatively constant over time. It appears that Canadian society, although probably valuating childlessness negatively, provided avenues such that some percentage of ever-married women could exercise the option of remaining childless.[3]

The general trend in childlessness was one of decrease, although an increase can be observed for ever-married women born between 1902 and 1911, women who were in their chief childbearing years during the depression and World War II. The percent of ever-married women childless was substantial, approximately 17 percent, and higher than for both younger and older women. As there is no reason to suspect that fecundity was lower for this generation of women, it can be suggested that economic, social, and political uncertainty was determinant in affecting an increase in small family size. Given the environment of the Canadian legal restrictions and the general lack of availability of contraceptives, motivation to avoid births

must have been very high.

Decrease in the percent of ever-married women producing childless families was marked for women born after 1917, particularly the birth cohort of 1922-1926. Of this cohort, aged 45-49 in 1971, only 9.6 percent completed the childbearing ages with no child, 7 percent less than the cohorts of 1902-1906 and 1907-1911. The chief childbearing years of women aged 45-49 in 1971 were 1942-1960, years which encompassed the "baby boom" era. Therefore, one important aspect of the heightened fertility of the post World War II years was a decrease in childless families. While childless families were not normatively prescribed in Canada in the years prior to World War II, economic and social conditions forced such an "option" for a portion of Canadian women.[4]

The incidence of childlessness at ages under 45 decreased from 1941 to 1971. For ages 30-45, the trend was one of continuous decline. However, for ages under 30, the reductions occurring between 1941 and 1961 were matched by an upswing in childlessness between 1961 and 1971. Changes in the age group 20-24 exemplify the trend: in 1941, 38.5 percent of ever-married women were childless; in 1961, the percent fell to 26.3; the 1971 figure was 42.0 percent. The key to this trend lies in timing differences. Women aged under 30 in 1941 postponed childbearing. Despite their high rates of childlessness in 1941, they went on to decrease

their childlessness to approximately 10 percent and to produce an average completed family size in excess of 3 children by 1961. Whether this pattern of postponement was typical of married women at earlier time periods, or if it was unique to this group of women, cannot be known. However, the declines in age-specific marital fertility for ages under 30 between 1921 and 1941, as shown in Table XXXIX, suggest that the depression and war may have been precipitating factors. By 1961, postponement of births at ages under 30 decreased significantly. As already discussed, the essence of the "baby boom" was earlier childbearing. By 1971, the pattern of postponement at young ages had returned. But the mechanism by which postponement was achieved differed in the two periods. For women of young age groups married before 1941, postponement of births was, in 1941, at least in part, accomplished through postponed marriage whereas, for women of young ages married before 1971, postponement of births was achieved by control of fertility in marriage.

To summarize, these data on children ever-born indicate decline in completed family size from 1941 to 1971. No significant increase in completed family size occurred as a result of the heightened period fertility of the "baby boom" years; rather, earlier childbearing is indicated. Declining family size was accompanied by a convergence in completed family sizes, as both large and small families

tended to disappear. Although reduction in large families could be anticipated, given the trend of general decline in family size, reduction in small families is less expected. At least in part, the trend of decline in small families was the result of high percentages of ever-married women remaining childless and producing only one child in the years of depression and war. By 1971, the trend had reversed itself, with large increases, compared to 1961, in childlessness at young ages. Whether permanent childlessness eventuates cannot be predicted.

It can be said that timing changes lie at the heart of the trend of marital fertility in Canada in the twentieth Century. Completed family size registered continuous decline, with a plateau, but no real increase, appearing among women whose main childbearing years spanned the 15 years after World War II. Accompanying this overall trend of decline in completed family size was a decrease in the age of childbearing which was, in turn, related to declines in female age at marriage. The initial effect of declines in age at marriage was to raise period fertility rates and to increase family size at young ages. By 1971, the effect of control of marital fertility at young ages was sufficient to overcome the fertility-enhancing effect of young marriage age.

The important effect of age at marriage as a determinant of number of children ever-born per ever-married

woman can be seen in Table XLII. For each census year and for each age group, number of children ever-born decreases with increases in age at (first) marriage. For example, among women aged over 45 in 1971, those who married at ages 15-19 bore 4.6 children, on average, whereas women who married at ages 30-34 bore only 2.1 children. In part, the relationship between age at marriage and children ever-born is a function of decreased fecundity with advancing age. Women who marry after age 30 have neither the physiological capacity nor the number of years before menopause to produce as many children as do women who marry at early ages. Analogously, women who marry early are exposed to the risk of childbearing for a longer period of time and during their more fecund years. Although physiology places an upper limit on the possible number of children ever-born to women who marry late in life, most women in Canada marry long before the age of 30 is attained and do not approach the completed family size dictated by physiological capabilities. For the bulk of women, then, factors other than physiological ones are determinant of family size.

As women marrying before age 30 constitute the largest group within the category of ever-married women, and hence play a major role in the determination of marital fertility trends, and because the fertility performance of women marrying before age 30 is generally not affected by biological brakes, the examination of age at marriage

Table XLII

Children Ever-Born per Ever-Married Woman by Age at Marriage and Age of Women Canada, 1941, 1961, 1971

Present Age and Age at First Marriage	1941[1]	1961	1971
15-19:			
15-19	.5	.7	.6
20-24:			
15-19	1.5	1.7	1.4
20-24	.6	.8	.6
25-29:			
15-19	2.8	3.0	2.5
20-24	1.5	1.9	1.5
25-29	.5	.8	.6
30-34:			
15-19	3.8	3.6	3.4
20-24	2.6	2.7	2.5
25-29	1.3	1.7	1.6
30-34	.4	.8	.9
35-39:			
15-19	4.7	4.0	4.0
20-24	3.3	3.2	3.2
25-29	2.1	2.4	2.4
30-34	1.0	1.5	1.5
35-39	.3	.5	.9
40-44:			
15-19	5.4	4.3	4.2
20-24	3.9	3.4	3.4
25-29	2.6	2.7	2.7
30-34	1.6	1.8	2.0
35-39	.7	1.0	1.2
40-44	.1	.4	.8

Table XLII, Continued

Present Age and Age at First Marriage	1941[1]	1961	1971
45+:			
15-19	6.6	5.1	4.6
20-24	4.9	3.9	3.6
25-29	3.4	2.8	2.8
30-34	2.3	2.0	2.1
35-39	1.3	1.2	1.4
40-44	.4	.6	.9
45+	.1	.2	1.0

[1]Excludes Newfoundland.

Sources: Dominion Bureau of Statistics (1944:52). Canadian Censuses: 1961 (cat. 98-508, table H2); 1971 (cat. 92-718, table 27).

differentials will be confined to this group. Although age at marriage exerts a considerable influence on completed family size, the power of this variable appears to be decreasing. In 1941, among ever-married women aged over 45, women who married at ages 15-19 had a completed family size 48 percent larger than women marrying at ages 25-29; in 1971, the differential had been reduced to 39 percent. This decrease was due to differential reductions in completed family size by age at marriage. Women marrying at ages 15-19 reduced their family size from 6.6 children ever-born in 1941 to 4.6 in 1971, or 30 percent. On the other hand, the reduction for women marrying at ages 25-29 was only 18 percent, from an average of 3.4 children to 2.8. Therefore, the more that fertility comes under control, the

more similar is completed family size, regardless of age at marriage.

The diminishing effect of age at marriage on number of children ever-born can be observed for women still in the childbearing years, as well. For example, in 1941, within the group the women aged 30-34, the family size of women marrying at 15-19 was 32 percent larger than that of women marrying at 20-24 and 66 percent larger than that of women marrying at 25-29. In 1971, the figures were 26 percent and 53 percent, respectively. Nevertheless, even among women aged under 30 in 1971, children ever-born differentials by age at marriage were substantial. Age at marriage continues as a determinant of fertility performance, although its long-term effect may simply be on the timing of births.

The relative importance of changes in age at marriage, on the one hand, and changes in marital fertility, on the other, in determining the average number of children ever-born by age of women can be assessed through a standarization procedure. By applying the 1941 figures for the percent of ever-married women of each age group marrying at each age category to the average number of children ever-born to ever-married women of each age group in later years (1961 and 1971), an expected average number of children ever-born can be calculated. The difference between the observed and expected values in average number of children ever-born reflects the effect of age at

marriage. Similarly, by applying 1961 and 1971 figures of number of children ever-born for each category of age at marriage within each age group to the 1941 percent distribution of women by age at marriage for each age group, an expected average number of children ever-born can be calculated. The difference between the observed and expected values can be attributed to the effect of changing marital fertility. The calculated figures are presented in Table XLIII. It can be seen that changes in age at marriage inflated the average number of children ever-born to women aged under 35, in both 1961 and 1971. Their fertility would have been lower if they had married according to the marriage schedule prevailing in 1941. The fact that age at marriage inflated the fertility of women aged 30-34 in 1961, but did not affect the fertility of this group when aged 40-44 in 1971 suggests that declining age at marriage results in earlier childbearing, but not increased completed family size. This observation is reinforced by the fact that the effect of marital fertility was positive for young ages and negative for older ages.

Ever-married women aged over 45 in 1961 and 1971 generally married prior to the upsurge in marriage that occurred after 1941. Thus, the effect of the age at marriage variable was small for these women. The declines in completed family size resulted from substantial reduction in marital fertility that were not counter-balanced by

Table XLIII

Observed and Expected Values of Children Ever-Born per Ever-Married Woman, by Age of Women. Canada, 1961, 1971

	(1) Observed	(2) Expected[1]	(3) (1)-(2)	(4) Expected[2]	(5) (1)-(4)
1961:					
20-24	1.3	1.2	+.1	1.1	+.2
25-29	2.2	1.9	+.3	1.9	+.3
30-34	2.8	2.5	+.3	2.7	+.1
35-39	3.1	3.1	0.0	3.3	-.2
40-44	3.2	3.3	-.1	3.7	-.5
45+	3.5	3.6	-.1	4.4	-.9
1971:					
20-24	.9	1.0	+.1	1.0	+.1
25-29	1.4	1.6	+.2	1.8	-.4
30-34	2.6	2.4	+.2	2.7	-.1
35-39	3.2	3.1	+.1	3.4	-.2
40-44	3.3	3.3	0.0	4.0	-.7
45+	3.2	3.4	-.2	4.4	-1.2

[1]If percent of women marrying at each age group is held at 1941 levels.

[2]If children ever-born, by age of women, is held at 1941 levels.

Sources: Table XLII and Appendix D.

decreases in average age at marriage. Therefore, in terms of a time dimension, declines in marital fertility preceded decreases in average age at marriage. This observation gives support to the contention that the enhanced ability to control births within marriage is a factor that precipitates

declines in average marriage age. As fertility comes under increasing control, marriage at earlier ages becomes increasingly feasible. This argument is strengthened by the observation of the decreasing importance of age at marriage as a determinant of children ever-born.

In order to more fully understand the transition in marital fertility in Canada, differentials in children ever-born per ever-married woman in terms of social and economic variables are now examined. The particular variables analyzed were drawn from information provided in the Canadian Censuses and, there is no guarantee that all relevant variables are included. Nevertheless, the strength of the differentials to be examined suggests that at least some of the crucial influences are tapped. The variables that are examined may be viewed as representing three constellations of factors: economic factors, which include the variables of place of residence (rural/urban) and income; cultural factors, which include the variables of religion and ethnicity; and educational attainment, which contains both cultural and economic elements.

This analysis is undertaken with the primary aim of identifying the determinants of marital fertility performance and any change over time in their effect. A second, related concern is to ascertain whether, which, and to what degree, segments of Canadian women were leaders in

the control of marital fertility. This second concern is a relevant one given the debate concerning the role of diffusion in the theory of demographic transition.

Beginning with the economic factors, specifically the variable of rural/urban residence, it can be seen in Table XLIV that consistent differences exist, with urban residence associated with smaller family size at all ages. This finding is an expected one, given the differential costs and benefits of children in urban vs rural settings and differential availability of contraceptive knowledge and methods in urban and rural locations. However, it will be noted that completed family size has decreased for all ever-married women, regardless of residence.

These data suggest that the magnitude of the rural/urban differential in children ever-born has changed over time. The extent of the differential for women who bore their children around the turn of the century (women aged over 65 in 1941, themselves born prior to 1876) was quite small, with rural completed family size 20 percent in excess of urban. Within a span of approximately 20 years, the excess had increased to 38 percent (women aged 45-54 in 1941). The comparable differential for women aged 45-54 in 1961 was 56 percent. Therefore, urban ever-married women underwent a more rapid decline in completed family size than did rural women. In the 1941 data, the extent of decrease in children ever-born, from ages over 65 to ages

Table XLIV

Children Ever-Born per Ever-Married Woman, by Place of Residence[1] and Age of Woman. Canada, 1941, 1961, 1971

	Urban	Rural	Rural/Urban Ratio (Urban = 100)
1941[2]:			
15-24	.8	1.1	138
25-34	1.7	2.6	153
35-44	3.0	4.4	147
45-54	3.7	5.1	138
55-64	4.0	5.2	130
65+	4.4	5.3	120
1961:			
15-19	.7	.8	114
20-24	1.2	1.6	133
25-29	2.0	2.7	135
30-34	2.5	3.5	140
35-39	2.8	4.0	143
40-44	2.9	4.2	145
45-49	2.7	4.2	156
50-54	2.7	4.2	156
55-59	3.0	4.4	147
60-64	3.3	4.6	139
65+	3.7	4.9	132
1971:			
15-19	.6	.8	133
20-24	.8	1.2	150
25-29	1.6	2.2	138
30-34	2.4	3.3	138
35-39	2.9	4.0	139
40-44	3.1	4.3	139
45-49	3.1	4.2	135
50-54	2.9	4.1	141
55-59	2.8	3.9	139
60-64	2.8	4.0	143
65-69	3.0	4.2	140
70+	3.5	4.6	131

[1]The definition of urban is inconsistent over censuses.

[2]Excludes Newfoundland.

Sources: Dominion Bureau of Statistics (1944:72-3).
Canadian Censuses: 1961 (cat. 98-508, table H1); 1971 (cat. 92-718, table 24).

45-54, was only 4 percent for rural women as compared to 16 percent for urban women. Thus, in the early period of fertility transition, control of fertility within marriage was initiated by the urban segment of the Canadian population. Although the behaviour of fertility control diffused to rural women, as the declines in completed family size provide evidence, rural/urban differentials have persisted, with no clear-cut evidence of convergence in recent times.

It will be recalled that rural/urban differentials in total fertility rate widened immediately after World War II (Table XIX) and it was argued that the Canadian "baby boom" was primarily a rural phenomenon. However, these data on children ever-born do not indicate a larger increase in completed family size for rural women whose chief child-bearing years were spent during the years immediately after World War II as compared to their urban counterparts. Slight increases were registered for both rural and urban women aged 40-44 and 45-49 in 1971. However, it appears that the mechanism behind the increase differed for urban and rural women. Hypothetical children ever-born figures, which indicate the number of children ever-born expected if age at marriage had undergone no change, were arrived at by applying the age at marriage schedule of a "standard" population, that of all women aged 65-69 in 1971. The hypothetical figures, shown in Table XLV, reveal no increase

Table XLV

Observed and Expected Values of Children Ever-Born Per Ever-Married Woman, by Place of Residence and Age of Woman. Canada, 1971

	Urban			Rural		
	(1) Observed	(2) Expected[1]	(3) $\frac{(1)-(2)}{(1)} \times 100$	(4) Observed	(5) Expected[1]	(6) $\frac{(4)-(5)}{(4)} \times 100$
65-69	3.0	3.0	0.0	4.2	4.0	4.8
60-64	2.8	2.8	0.0	4.0	3.9	2.5
55-59	2.8	2.8	0.0	3.9	3.8	2.6
50-54	2.9	2.8	3.4	4.1	4.0	2.4
45-49	3.1	2.9	6.5	4.2	3.9	7.1
40-44	3.1	2.8	9.6	4.3	3.7	14.0

[1]Calculated by applying the percentage marrying for the first time at each age group in the "standard" population. The percentages are:

15-19	20.7	35-39	4.7
20-24	39.2	40-44	2.7
25-29	20.1	45+	3.3
30-34	9.0		

Source: Canadian Census: 1971 (cat. 92-718, table 27).

in children ever-born for urban women aged 40-49 in 1971 and decrease for rural women. The comparison of the observed and hypothetical figures, which indicates the extent to which changes in age at marriage affected the observed values of children ever-born, shows that the completed family size of rural women was more strongly influenced by decreases in age at marriage than that of urban women. In fact, for rural women, decreases in completed family size were "cancelled out" by increases in young marriage. The fact that the "marriage boom" was greater in rural areas than urban areas helps explain the widening rural/urban differential in total fertility rate after World War II. The total fertility rate, which reflects the average number of children that a (synthetic) cohort of women will bear through their lifetime, refers in all women, regardless of marital status. As such, the rate is sensitive to changes in marriage patterns. The differential increase in total fertility rate in rural and urban areas in 1951 should be viewed in the light of differences in marriage trend. Thus, rural and urban completed fertility did not diverge, or converge, during the "baby boom" era; the observed divergence in total fertility rate was due to the differential impact of marriage patterns.

The "baby boom" did not result in larger completed families, but in timing differences, which were related to declining age at marriage. As the impact of declining age

at marriage was greater in rural areas, the conclusion still holds that the "baby boom" was primarily a rural phenomenon.

The second economic variable, income, has exerted a certain influence on marital fertility, as shown in Table XLVI. As the data are scant and inconsistent in form, only a few comments will be made. The extent of the income differential in completed family size, as indicated in the calculated ratios, is not negligible, but it is smaller than the urban/rural differential. The direction of the relationship between income level and completed family size is consistently inverse, with higher income associated with smaller completed family size. No clearcut evidence of convergence over time in completed family size by income level is discernible. In this respect, the effect of the income variable parallels that of the residence variable.

There is a hint that the nature of the relationship between income and children ever-born is undergoing change. In 1961, among ever-married women aged 25-29, virtually no income differential in family size appeared. In 1971, for women aged 15-44, the differential was reversed, with a higher average children ever-born associated with higher income level. Collishaw (1976:59-60) argues that a positive relationship between income level and marital fertility is to be expected in a population characterized by fertility control and rational family planning. As childrearing is costly, those with more money are

Table XLVI

Children Ever-Born per Ever-Married Woman, By Level of Income[1,2] and Age of Woman Canada, 1941, 1961, 1971

	Low	Middle	High	Low/High Ratio (High = 100)
1941[3]				
45-54	4.1	3.5	3.3	124
1961				
25-29	2.0	2.1	2.1	95
45-49	3.0	2.6	2.4	125
1971				
15-44	2.5	2.4	2.8	89
45+	3.6	3.1	3.1	116

[1]1971 figures refer to family income in families with the husband present; 1961 figures refer to husband's income; 1941 figures refer to husband's income in families with the husband present.

[2]For 1941, low income refers to $950-1,949, middle to $1,950-2,949, high to $+2,950. In 1961, the comparable figures are $1,000-3,000, $5,000-7,000, and $+10,000; in 1971, they are $-3,000, $10,000-14,999 and $+25,000.

[3]Excludes Newfoundland.

Sources: Dominion Bureau of Statistics (1946:6); Henripin (1972:266); Collishaw (1976:57).

likely to have larger families. This argument rests on the assumption that income level is a major determinant of desired family size. However, the observed positive relationship between income and children ever-born for women in the childbearing ages would appear if income affects only the timing of births, but not completed family size. The exact nature of the relationship between income level and completed family size for women aged 15-44 in 1971 will not be known until these women reach the completed family size ages.

It can be concluded that economic factors have operated in a significant way to affect marital fertility behaviour. Of the two variables examined, residence is of more importance than income. As neither variable exhibits a trend of convergence, it can be said that economic factors continue to play a major role in determining family size in Canada.

Moving to the cultural factors, ethnicity will be examined first.

Ethnic differentials in marital fertility can be assessed in two ways, given the data available. Vital Statistics publications for the period from 1931 to 1951 provide information on period marital fertility by ethnicity of mother. Also, the Canadian Censuses of 1941, 1961, and 1971 provide data on children ever-born per ever-married woman by ethnic background of mother. The two sets

of data, presented in Tables XLVII and XLVIII, indicate large differentials in marital fertility by ethnicity. Women of British origin have displayed the lowest levels of marital fertility; women of French origin, the highest. Women of other European origins and Asian origin exhibited intermediate levels of marital fertility.

Table XLVII

Marital Fertility Rates by Ethnicity of Mother, Canada, 1931, 1941, 1951

	Rates Per 1000 Married Woman:				
	British	French	West European	East European	Asian
1931[1]	150.3	310.5	183.9	203.8	-
1941[2]	141.6	264.4	160.2	141.5	211.1
1951	158.0	237.8	174.2	146.3	186.5
	Percent Change:				
	British	French	West European	East European	Asian
1931-41	-5.8	-14.8	-12.9	-30.6	-
1941-51	+11.6	-10.1	+8.7	±3.4	-11.7

[1]Excludes Newfoundland in all years and Yukon and Northwest Territories in 1931 and 1941.

[2]Rates adjusted for underenumeration.

Sources: Vital Statistics: 1931 (tables 27 and 28); 1941 (tables 36 and 37); 1951 (table 35). Canadian Censuses: 1931 (v. 4, table 49); 1941 (v. 4, table 3); 1951 (v. 2, table 30).

Table XLVIII

Children Ever-Born per Ever-Married Woman, By Ethnicity and Age of Woman. Canada, 1941, 1961, 1971

	British	French	Other N.W. European	Other European	Asian	French/British Ratio (British = 100)
1941[1]						
45-54	3.3[2]	4.7[3]	3.6[4]	-	-	142
1961						
15-19	.8	.7	.7	.6	.6	88
20-24	1.4	1.4	1.3	1.1	1.2	100
25-29	2.2	2.4	2.0	1.9	1.8	109
30-34	2.7	3.2	2.5	2.4	2.3	119
35-39	2.9	3.9	2.7	2.6	2.6	134
40-44	2.9	4.3	2.9	2.8	2.8	148
45+	2.9	5.1	3.4	3.5	3.7	176
1971						
15-19	.6	.6	.6	.5	.5	100
20-24	.9	.9	.9	.9	.8	100
25-29	1.7	1.7	1.7	1.7	1.3	100
30-34	2.6	2.7	2.6	2.4	2.1	104
35-39	3.1	3.4	3.0	2.8	2.8	110
40-44	3.2	3.9	3.1	2.9	3.0	139
45+	2.8	4.4	3.1	3.1	3.3	157

[1]Excludes Newfoundland.

[2]Refers to English mother tongue.

[3]Refers to French mother tongue.

[4]Refers to European mother tongue.

Sources: Dominion Bureau of Statistics (1945:12). Canadian Censuses: 1961 (cat. 98-508, table H4); 1971 (cat. 92-751, table 31).

The trends displayed by the various ethnic groups have been divergent. The data given in Table XLVII indicate that the increase in Canadian marital fertility between 1941 and 1951 was not experienced by all groups of Canadian women; only two groups, women of British and western European origin, registered increases while all other women exhibited decreases. As a result of this differential change, the extent of ethnic variation in marital fertility decreased. In 1931, French marital fertility was 207 percent in excess of French fertility; by 1951, the figure was 151 percent.

The data on children ever-born per ever-married woman indicate similar ethnic differentials and trend toward convergence. Ethnic differentials in the completed family size of women aged over 45 in 1961 and 1971 were large, particularly the differential between British origin and French origin ever-married women. However, the differentials for women of younger childbearing age in 1961 and 1971 were extremely small. For women aged under 30 in 1971, no French-British differential in children ever-born existed at all. Thus, a variable that in the past was of considerable influence in dictating number of children ever-born has ceased to play a role in determining marital fertility.

The data on period marital fertility suggest that the marital fertility behaviour of the various ethnic

categories in Canada differed during the "baby boom" years. The data on children ever-born substantiate this point and further indicate that the trend of completed family size was similarly divergent. The completed family size of women of British origin increased for women who were in their chief childbearing years during the "baby boom" whereas the completed family size for all other women declined. The magnitude of the change can be roughly estimated by comparing, for each ethnic category, the completed family size of women aged over 45 in 1961, women whose childbearing years generally preceded the post-World War II era, with women aged 40-44 in 1971. The completed family size of British origin women was augmented by approximately 10 percent. The completed family size of all other women declined by varying amounts: 24 percent for French origin ever-married women; 9 percent for women of north and west European origins; 17 percent for ever-married women of other European origins; 19 percent for women of Asian ethnic background. The fact that completed family size in Canada as a whole registered virtually no increase for women whose childbearing years spanned the years after World War II resulted from the counterbalancing trends in completed family size experienced by the various ethnic groups in Canada. If Canada was composed of a larger British segment, increases in children ever-born would have been registered.

Thus, "baby boom" increases in completed family size

occurred within a category of women in Canadian society typically characterized by low levels of marital fertility. However, it will be remembered from the previous chapter that British women experienced larger increases in marriage after World War II than did women of other ethnic backgrounds. Also, we know from the previous discussion concerning age at marriage differentials that declines in age at marriage are associated with increases in the number of children ever-born. Therefore, the increments in completed family size registered for British origin women may reflect the proportionately larger increase in the percent of women marrying at young ages.

A second cultural variable, and one related with ethnicity, can be examined in terms of its influence on marital fertility. Table XLIX presents data on children ever-born per ever-married woman by religion. The differentials are large, with Catholic women displaying the highest levels of marital fertility and Jewish women, the lowest. However, as with the variable of ethnicity, religious differentials in children ever-born are rapidly disappearing, particularly the Protestant-Catholic differential. For ages under 30 in 1971, the number of children ever-born to Catholic mothers and Protestant mothers was identical.

Again, the trend in completed family size differed, with groups typically associated with small completed family

Table XLIX

Children Ever-Born Per Ever-Married Woman,
By Religion and Age of Woman
Canada, 1941, 1961, 1971

	Catholic	Protestant	Jewish	Catholic/Protestant Ratio (Protestant = 100)
1941[1]				
45-54	4.5	3.2	-	141
1961				
15-19	.7	.8	.1	88
20-24	1.3	1.3	.8	100
25-29	2.3	2.1	1.7	110
30-34	3.0	2.6	2.2	115
35-39	3.6	2.8	2.3	129
40-44	4.0	2.7	2.1	148
45+	4.7	2.8	2.2	168
1971				
15-19	.6	.6	.3	100
20-24	.9	.9	.5	100
25-29	1.7	1.7	1.4	100
30-34	2.7	2.6	2.3	104
35-39	3.3	3.0	2.5	110
40-44	3.6	3.1	2.5	116
45+	4.1	2.7	2.3	152

[1]Excludes Newfoundland.

Sources: Dominion Bureau of Statistics (1945:12).
Canadian Censuses: 1961 (cat. 98-508, table H8);
1971 (cat. 92-751, table 32).

size registering increases during the "baby boom" years. For Catholic ever-married women, women aged 40-44 in 1971 had a family size 23 percent smaller than women aged over 45 in 1961. Protestant and Jewish ever-married women augmented their family size by 11 percent and 14 percent, respectively.

In terms of cultural factors in their relationship with marital fertility, it can be concluded that, historically, ethnicity and religious affiliation have been major factors determinant of marital fertility behaviour. However, the strength of the cultural influence has decreased to a marked extent. One can conclude that culture plays a dominant role in the timing of the initial acceptance of fertility-limiting behaviour, but once the cultural barrier has been overcome, marital fertility can decline very quickly.

The most meaningful way to distinguish marital fertility behaviour in Canada is in terms of education level. As shown in Table L, very large differentials in children ever-born in terms of level of educational attainment can be observed. The excess in completed family size for ever-married women with elementary education as compared to ever-married women with (at least some) university education was 69 percent, 91 percent, and 63 percent in 1941, 1961, and 1971, respectively. Women with secondary education exhibited an intermediate size of completed family, generally somewhat closer to the level of

Table L

Children Ever-Born Per Ever-Married Woman, By Level of Educational Attainment and Age of Woman, Canada, 1941, 1961, 1971

	Elementary[1]	Secondary[2]	University	Elementary/University Ratio (University = 100)
1941[3]				
45-54[4]	4.6	3.6	3.3	139
1961				
15-19	.8	.7	.2	400
20-24	1.6	1.3	.7	228
25-29	2.5	2.0	1.5	167
30-34	3.2	2.6	2.2	145
35-39	3.7	2.8	2.5	148
40-44	3.9	2.8	2.5	156
45+	4.2	2.7	2.2	191
1971				
15-17	.9	.6	.4	225
20-24	1.4	1.0	.4	350
25-29	2.3	1.8	1.0	230
30-34	3.1	2.7	2.0	155
35-39	3.6	3.1	2.6	138
40-44	3.9	3.2	2.8	139
45+	3.9	2.8	2.4	163

[1]0-8 years of schooling. The 1971 figures exclude those with other training.

[2]9-13 years of schooling in 1961 and 1971; 9-12 in 1941. The 1971 figures exclude those with other training.

[3]Excludes Newfoundland.

[4]Women in normal wage-earner families only.

Sources: Dominion Bureau of Statistics (1946:6). Canadian Census: 1961 (cat. 98-508, table H3); 1971 (cat. 92-751, table 34).

university educated women than to the level of women with elementary education.

Not only do differences in completed family size by level of educational attainment exist, but also the age pattern of childbearing varies by educational attainment. For example, for women aged 35-39, 69 percent of their cumulated childbearing to that age was completed by ages 25-29 in the case of women with elementary education; for women with university education, the comparable figure was 58 percent. In other words, higher education is associated with delays in childbearing. As a result, differentials in number of children ever-born are very large at the young ages and tend to decrease somewhat over the course of the childbearing years.

Level of educational attainment differentials in completed family size and in the timing of births can be explained in terms of the various consequences of increased education. One effect of increased education is to raise age at marriage which, as discussed previously, is associated with smaller family size. Probably as important is the change in attitudes and values that is concomitant with increased levels of education. Also, higher education brings with it the perception of, and the reality of, alternatives that compete with the traditional tasks of childbearing and childrearing. Not only is the motivation to control family size higher among women with higher

levels of education, but the means by which to control family size more easily attained.

Despite these large differentials, the trend of decline in completed family size was quite similar. Completed family size for ever-married women with elementary education decreased from 4.6 children for women aged 45-54 in 1941 to 3.9 for women aged over 45 in 1971, a decrease of 15 percent; for women with university education, the comparable reduction was 27 percent. As a result, no convergence in completed family size by level of educational attainment occurred.

A closer examination of the data presented in Table L, however, reveals a certain divergence in the trend of children ever-born by level of educational attainment. An increase in children ever-born between 1961 and 1971 can be observed for university educated women at ages over 35. The increase for women aged 40-44 is particularly large, approximately 11 percent. The same phenomenon occurred in the case of women with secondary education. However, no increase took place in the case of women with elementary education. This finding is noteworthy because the particular group of women involved is the group that spent its major years of childbearing in the "baby boom" era. Thus, again it appears that the "baby boom" did imply a larger completed family size for at least some portion of the Canadian population. The fact that they were segments

of the Canadian population that were traditionally low fertility groups contains an important implication. An increase in marital fertility within a category of women that typically displayed a "good" record in fertility control could be taken to mean that the increase was due to motivational factors, i.e., an upward swing in desired family size, and not the result of the contraceptive mistakes expedited by increased exposure to the risk of childbearing that accompanies declines in age at marriage.

To summarize this examination of Canadian marital fertility, one major finding is that marital fertility declined substantially within all segments of Canadian society during the course of the twentieth Century. The fact that decline was initiated within a legal-religious environment that discouraged it attests to the strength of the motivation to control fertility that arises during the course of economic and social development.

Marital fertility, however, did not decline at the same pace within all segments of the Canadian population. It appears that the lead in marital fertility decline occurred within urban areas, among women characterized by high levels of educational attainment, Protestant and Jewish religious affiliation, and British ethnicity. As the variables of residence, educational attainment, religion, and ethnicity are interrelated one with the other, it is difficult to know their relative importance in determining

marital fertility. However, given the fact that educational attainment differentials in family size have remained so large, even in 1971, it can be speculated that level of education is in itself a major factor affecting marital fertility.

One defining characteristic of marital fertility during the twentieth Century was a trend towards earlier childbearing. In turn, this trend was a direct result of declining age at marriage. It will be noted that major declines in age at marriage did not occur until fertility within marriage had undergone substantial declines. Declines in marital fertility made possible the declines in age at marriage that changed the timing of births within marriage. The initial effect of declining age at marriage, and earlier childbearing, was to raise period marital fertility. The "baby boom" of the post-World War II years reflected this initial effect of marriage change. The fact that the "baby boom" did not eventuate in larger completed family size in Canada attests to the importance of marital fertility declines over declines in age at marriage. Earlier marriage brings with it a longer period of exposure to the risk of childbearing during the ages of high fecundity, and *ceteris parabus*, a larger completed family size. However, things did not remain equal; Canadian married women became better able to control their family size. Thus, no increase in completed family size was registered in Canada

as a whole.

However, some segments of the Canadian population did register some increase in completed family size during this period. The groups so doing were traditionally characterized by low levels of marital fertility: women with high levels of educational attainment, Protestant and Jewish women, women of British ethnic origin. It is possible that the crucial variable determining increase for these groups of women was age at marriage change. In the case of British origin women, it is known that the extent of increase in marriage after World War II was larger than for other women. However, the effect of age at marriage as a determinant of completed family size is less when low levels of marital fertility prevail. It is possible that desired family size rose to some degree for these women. Blake and Das Gupta (1975) argue that the increases in completed family size registered in the United States during the "baby boom" were due to larger family size preferences, motivation rather than mistake. Given that completed family size rose in Canada among those women less likely to make fertility mistakes, given their historically low levels of marital fertility, one is tempted to side with Blake and Das Gupta in assigning to motivation the key role in the determination of the completed family size increase.

In terms of extent of differentials in marital fertility, there is evidence of both convergence and lack of

convergence. Variables that have been termed cultural, i.e., religion and ethnicity, which played an extremely important role in the determination of marital fertility in the past have ceased to be operative in affecting family size. The convergence in children ever-born in terms of the cultural variables has been marked. On the other hand, differentials in family size by what have been termed economic variables, i.e., place of residence and income, have not undergone convergence. These variables continue to play a major role in affecting marital fertility level, as does educational attainment. It can be stated that as marital fertility comes under control, the grounds for differing levels move out of the realm of cultural dictates.

Footnotes

[1]These women have not reached the end of their fecund years, but fertility at ages past 40 is so low that the comparison will not be affected.

[2]Assuming that 20-34 are the ages of chief childbearing.

[3]This is not to deny the role that widowhood and divorce can play in inflating the incidence of non-physiological childlessness.

[4]The factor of decreased widowhood cannot be discarded as a variable operating to decrease childless families. However, the increase in the percent of ever-married women producing childless families among women born between 1902 and 1911, as compared with women born prior to 1902, cannot be accounted for by the variable of widowhood.

CHAPTER VII

ASPECTS OF THE CANADIAN FERTILITY TRANSITION

This chapter seeks to delineate the distinctive features of the Canadian fertility transition. As such, it focusses upon the variable of culture in relationship with migration, i.e., the demographic patterns that varying ethnic groups brought into Canada. This analysis is not intended to suggest that culturally related factors are the only, or even the primary, ones in determining the transition to low fertility, but rather that their influence cannot be ignored in the explication of Canadian fertility transition.

One distinctive characteristic of Canadian society is the existence of a high degree of cultural diversity, along ethnic, linguistic, and religious lines, the product of successive movements of peoples into Canada. This characteristic makes Canadian society an excellent testing-ground for an examination of the role that cultural factors can play in fertility transition. Recent statements of demographic transition theory have emphasized the role of cultural factors in determining the timing and pace of fertility decline in the European experience (Coale, 1973).

In terms of marital fertility, cultural factors have been focussed upon, given repeated failures to discover any close association between level of socio-economic development and level of marital fertility (van de Walle and Knodel, 1967). Particularly striking, early declines in marital fertility have been documented in undeveloped portions of Portugal (Livi-Bacci, 1971), Spain (Leasure, 1963), and Hungary (Demeny, 1968). Such findings have led to the argument that populations differ in the extent to which they are receptive to family limitation behaviour and that the degree of receptivity is culturally determined. In terms of nuptiality, the striking difference between eastern and western Europe in historical marriage pattern, as delineated by Hajnal (1965), can be viewed as a product of culturally induced differences in system of kinship and pattern of family organization.

Focussing first on Canadian marital fertility, it has been shown, in Tables XLVII through XLIX, that religious and ethnic differentials in family size were large, at least during the first half of the twentieth Century, with the cultural complex of French ethnicity and Roman Catholicism associated with high levels of marital fertility. However, at both the beginning and the end of the time period under consideration, 1851 to 1971, cultural differences in marital fertility were virtually non-existent. For example, as shown in Appendix B, in 1851,

no difference in marital fertility can be detected between Lower Canada or Quebec, consisting of a predominantly French, Roman Catholic population, and Upper Canada or Ontario, a more diverse population, but one which can be viewed as representing English-speaking, Protestant culture. Similarly, in 1971, ethnic and religious differentials in children ever-born per ever-married woman had disappeared for ages under 35, as shown in Tables XLVIII and XLIX. These findings suggest that it is the timing of family limitation behaviour that is most sensitive to religious and ethnic determinants. Thus, the cultural influence is not indelible; rather, it operates to facilitate or hamper initial acceptance of family limitation behaviour. The French Canadian experience further indicates that once fertility control within marriage becomes acceptable in a late-approving population, the pace of marital fertility decline can be more rapid than in populations initially more receptive to such behaviour.

As with marital fertility, ethnic differences in marriage behaviour can be observed in Canada. However, unlike the case of marital fertility where the differential fell along French-English lines, the differential in nuptiality corresponded to a western European-eastern European distinction. As shown in Table XXXVII, in the earlier part of this century, women of eastern European origin were characterized by earlier and more universal

marriage than were women of British, French, and other western European origins. As with marital fertility, the ethnic differentials disappeared during the course of this century.[1] However, the pattern of convergence was markedly different. In the case of nuptiality, the group displaying the variant pattern, i.e., women of eastern European origin, did not undergo a rapid alteration in behaviour; rather, the other groups displayed a greater change in marriage as they experienced the increase in nuptiality that characterized the post-World War II period.

In the case of both marital fertility and female nuptiality, cultural differentials were large in the past and have tended to disappear in recent times. Although the path of convergence differed, the important point is that the influence of culture was variable during the fertility transition in Canada.

The cultural differentials in marital fertility and nuptiality operated to affect the trend of fertility decline in Canada. The existence of a large subpopulation that was initially slow to accept control of fertility within marriage but which, after acceptance, experienced very rapid marital fertility decline, affected the trend of marital fertility by steepening it. On the other hand, the existence of a high nuptiality population in Canada in the early part of the twentieth Century functioned to inflate the level of overall fertility, and accounted, to some

extent, for the plateau in general fertility during the early decades of this century.

One important aspect of the effect of culture upon the trend of fertility decline is the timing of the introduction of ethnically distinctive groups into Canada. The historical movement of peoples into Canada contains the characteristic of discreteness, i.e., different ethnic groups have tended to enter Canada, as groups, at different periods of time. Initial European settlement was predominantly French, with the major flow of immigration completed by the turn of the seventeenth Century. Eighteenth and nineteenth Century immigration was primarily of English-speaking populations, with a substantial number of Irish escaping famine conditions, and of western European populations. The early decades of the twentieth Century were marked by substantial movement of eastern Europeans into Canada. More recent immigration has been characterized by less homogeniety in cultural background of immigrants and by an increased number of non-Europeans.

In terms of the effect of cultural factors on the trend of fertility decline, the timing of the in-migration of ethnically distinctive groups is as important as the in-migration itself. This can be seen most clearly in the case of the migration to Canada in the early twentieth Century of people from areas of Europe characterized by a non-European marriage pattern. Their introduction facilitated an upswing

in female nuptiality in Canada that counterbalanced declining marital fertility and resulted in a period of constancy in general fertility after initial declines had been registered. Had this group entered Canada at a different period of time, the effect on the trend of fertility would have been quite different. Similarly, it can be argued that the immigration of urban Britons in the latter half of the nineteenth Century facilitated the initial decline in marital fertility by introducing into Canada a group amenable to family size limitation. Had Canada remained predominantly French, it seems likely that the timing of sustained decline in marital fertility would have occurred later, *ceteris parabus*.

The first two stages of the four-stage fertility transition in Canada can be illuminated by focussing upon the movement of ethnic groups, then. The first stage, characterized by major fertility declines, can, at least in part, be viewed as a function of the in-migration of peoples receptive to family limitation coupled with the out-migration of peoples characterized by resistance to control of marital fertility. The emigration of substantial numbers of rural French Canadians points out the fact that out-migration, rather than reduced marital fertility, can be a viable response to population pressure (Davis, 1963). Similarly, the second stage of fertility, the period of constancy from 1891 to 1921, has migration-related aspects.

However, in this case, it is the in-migration of a group characterized by a variant marriage pattern that is of importance.

As a result of a culturally-related migration pattern in Canada, fertility transition departs from the typical western model, as outlined by Ryder (1967:30). He posits a four stage historical sequence as follows: high nuptiality, high marital fertility; low nuptiality, high marital fertility; low nuptiality, low marital fertility; high nuptiality, low marital fertility. The first stage may be viewed as one in which no control over fertility is operative; the second stage as characterizing a period in which Malthusian limitation is practised only; the third stage as one where both Malthusian and non-Malthusian limitation operate; the fourth stage as one when non-Malthusian limitation is practised to such a degree that the abandonment of Malthusian limitation is possible.

The first stage did not exist in Canada, although it seems likely that the population that came to be Canadian was so characterized at a time prior to overseas movement. In other words, the first transition preceded Canadian settlement. As such, Canada's take-off in fertility began with the second stage for, as seen earlier, the nineteenth Century was characterized by high marital fertility in conjunction with the western pattern of relatively low levels of nuptiality. Movement out of the second stage,

into a situation of increased marital fertility control, was not accompanied in Canada by continued low levels of nuptiality. Rather, nuptiality began to steadily increase beginning around the turn of the century. Thus, in Canada the commencement of non-Malthusian control heralded the termination of Malthusian control much sooner than in other western populations. This is a major way in which the Canadian fertility transition differs from the typical western one and, as discussed previously, the in-migration of a particular ethnic group appears to be a major factor involved.

The role of migration in determining the trend of Canadian fertility partially accounts for the distinctive nature of the Canadian fertility transition. The Canadian experience illustrates an instance in which fertility transition cannot be analyzed in isolation from the factor of migration in its relationship with cultural composition. A recent call has been made for the inclusion of the migration variable in demographic transition theory, but with a focus upon out-migration as a type of response involved in demographic transition (Friedlander, 1969). In the Canadian case, the more crucial aspect appears to be in-migration in its relationship with culturally-determined demographic behaviour. Although it can be argued that the Canadian experience was a unique one, in terms of the extent and pattern of in-migration, its existence points to the

theoretical importance of migratory movements in the analysis of fertility transition.

Canadian society has been marked by cultural diversity, resulting from the successive migrations of populations into Canada. It has been shown that the timing of the in-migration of various groups, in conjunction with their particular pattern of demographic behaviour, operated to affect the course of Canadian fertility transition. A second point, which has been touched upon but deserves further comment, is the observation of convergence in cultural differentials in marital fertility and nuptiality in recent decades.

As a result of ethnic diversity, Canadian society lacked a common tradition in terms of marriage and marital fertility behaviour. Rather, different groups were characterized by their own "traditional" patterns. For example, the French Canadian pattern was one of high marital fertility counterbalanced, to some degree, by relatively low levels of female nuptiality. On the other hand, Canadians of eastern European origin were characterized by higher nuptiality coupled with lower levels of marital fertility. Thus, in the Canadian case, it is not possible to view demographic change as a transition from "the" traditional to the modern; rather, the transition was one from diverse patterns to a shared, Canadian one.[2] By implication, the particular path taken by each distinct group in the

achievement of a shared, Canadian pattern was dependent upon the particular pattern of traditional behaviour.

It remains somewhat an open question whether the emergent Canadian pattern is the result of the combination of the behaviour of various groups or the result of the imitation of a leading sector by lagging sectors. It is clear that the British, Protestant groups were the leaders in control of fertility within marriage in Canada; the later start in family limitation by the other groups can be viewed, to some degree, as imitative behaviour. It is equally clear that the British groups ceased to play a leading role in terms of marital fertility behaviour as the non-British groups failed to register the increases in completed family size that characterized the British groups. In the case of marriage behaviour, it is more difficult to identify a leading group. Both British and French groups were characterized by relatively low levels of female nuptiality in the nineteenth Century, followed by substantial increases over the course of the twentieth Century, with somewhat greater increases registered by the British. The eastern Europeans represent a case in which relatively high levels of female nuptiality, transplanted from that part of Europe, remained largely unchanged, not characterized by the magnitude of increase in the twentieth Century that was experienced by western European-derived populations. It can be argued, however, that the eastern

Europeans in Canada were able to uphold high levels of nuptiality, not undergoing a Malthusian transition, because they borrowed contraceptive knowledge, attitudes, and practices from the leaders in the control of fertility within marriage. The view here is that the control of fertility within marriage in Canada can be subsumed by a lead-lag framework and that the leading groups exerted a direct influence upon the family limitation behaviour of lagging groups and, hence, an indirect influence upon marriage behaviour.

The emergence of a Canadian pattern of demographic behaviour or, in other words, the diminuition of ethnic differentials, may be interpreted in two different ways. On the one hand, it can be argued that convergence signifies the discontinuation of the cultural influence on behaviour. On the other hand, one can argue that convergence, or the development of a shared, Canadian pattern of nuptiality and marital fertility, illustrates the existence of a Canadian culture that is functioning to determine behavioural patterns. Both viewpoints can be viewed as partially valid. On the one hand, traditional cultural influences are no longer operative, lending support to the first interpretation. However, the fact of strong convergence in Canadian marital fertility and marriage leads one to suspect that demographic behaviour continues to be determined by a social environment in which

cultural elements are a part.

With the demise of traditional cultural influences upon marriage and family behaviour, one can ask what are the elements of the common cultural milieu affecting these behaviours in contemporary Canadian society. Given data limitations, it is possible to speculate only in a very general way. A constellation of family attitudes can be identified as possible elements related to present-day marriage and family size behaviour, a constellation not necessarily unique to Canadian society in an age of increased international communication. On the one hand, family solidarity appears weakened, as increased divorce rates suggest. Although low divorce rates in the past, at least partially, reflect stringent legal barriers and an attitude dictating that families stay together, regardless of the quality of family interaction, rather than family harmony or stability, the increase in divorce, and its eased accessibility, can be viewed as signifying an attitudinal change concerning family life. In content, the contemporary attitude consists of two parts. One, it is perceived that the maintenance of the family as a unit is not necessarily the best route for the family facing problems. Two, increased emphasis upon the individual, as opposed to the family unit, has meant a lessened commitment to family maintenance.[3]

As family solidarity has weakened, attitudes toward

marriage have undergone change. Although there is no evidence that Canadians have ceased to view marriage as desirable, or at least inevitable, the increased incidence of cohabitation, or common-law marriage, can be viewed as a symbolic attack upon the institution.[4] On one level, increased cohabitation may be a response to rising divorce. Couples may engage in "living together" arrangements, justifying them as a mechanism to avoid future divorce. Or, cohabitation may be engaged in as an alternative to marriage, given a perception of instability in present-day marriages. In either case, the behaviour of cohabitation reflects a lessened faith in the institution of marriage. On another level, cohabitation indicates a greater permissivity in living arrangements and, with that, a breakdown of traditional normative structures concerning sexual conduct.

In the realm of sexual behaviour, a number of developments seem significant. One, sex has taken on a "fun" element, for both the married and the non-married and for both men and women. To some degree, this reflects the increased ability to avoid the serious consequences of love-making, made possible by increasingly effective contraceptive measures. In other words, sex has become "fun" with the breakage of the inevitability of the link between coitus and childbearing. This broken link has also meant the development of an attitude that sees sexual

activity as a route to ends other than child-production, i.e., to ends such as self-awareness and personal insight.

Changes in attitudes toward sex are reflected in, and aided by, media coverage of the subject of human sexuality. In both the written and visual media, in both entertainment and educational forms, sex-related topics have increased in presentation and become more explicit in content. One significant aspect of the change in the quantity and quality of sex presentation in the media is its effect of making differing segments of society aware of the thoughts and actions of other segments (Gagnon and Simon, 1970:1-2). With decreased insulation, we might expect the breakdown of traditional sexual attitudes, along ethnic lines.

A last set of attitudes comprising the present-day Canadian cultural complex regarding family is that concerning children. In terms of number of children per family, Canadian attitudes have converged on a small-family norm. The ideal, and practice, of few children per family is related with the other aspects of family discussed. With the movement of sex into the realms of "fun" and personal awareness, children become only one, of several, outcomes of sexual activity. Also, it can be argued that the change in the content of sexual experience has meant a change in the content of attitudes towards children. On the one hand, children become another way for parents to "have

fun." On the other hand, the increased individualism implied in the "sex for personal awareness" attitude may feedback into attitudes towards childrearing with a focus upon non-authoritarianism and personality development.

The ideal of the small family has a number of possible relationships with attitudes toward marriage. It is likely that the intensity of the couple bond is viewed as increasingly important,[5] given less competition with it. With that, motivations to marry may be lessened, if it is the dyadic relationship that is viewed as important[6] rather than the bearing of children. Attitudes toward children are related, lastly, with the issue of family solidarity. It could be argued that family solidarity has weakened, in part, as a result of decreases in family size. Divorce is more likely with fewer children, given the social perception that marriages should be held intact when children are involved, and with an attitude towards childrearing that stresses individualism.

Thus, four related attitudinal components--concerning family solidarity, marriage, sex, and children--have been identified as possible elements that make up the present-day Canadian culture complex regarding family. While it cannot, at this point, be claimed that the attitudes as specified here apply equally to all segments of Canadian society, that the elements are uniquely Canadian, or that attitudes and behaviour necessarily bear a one-to-

one relationship with one another in these matters, the evidence concerning convergence in marriage and family size behaviour in Canada can be made more understandable, to some degree, using this framework.

To sum up, it can be stated that Canadian society, as a demographic laboratory, contains certain unique characteristics that, by proving useful in delineating the nature of the Canadian experience in fertility decline, have theoretical implications. These distinctive characteristics, which are interrelated, are a high degree of cultural diversity, a pattern of immigration, related to ethnicity, and the lack of a traditional pattern of demographic behaviour.

The cultural diversity of the Canadian population was translated, in the past, into variation in demographic behaviour. As has been observed, cultural differentials in both marriage and marital fertility were marked. Given the variety of European demographic responses, this observation is perhaps not unexpected. However, it points out the resilience of cultural determinants of demographic behaviour in the sense that they withstood the test of transference to a new environment, at least for a time.

The particular pattern of immigration characterizing Canadian society may have been a factor accounting for the continuation of traditional patterns of behaviour. In Canada, migration was "cultural" to a significant, and

perhaps unparalleled, degree. On the one hand, as discussed, groups tended to enter, as groups, at distinct periods of time. Also, the separate groups tended to settle in distinct geographical regions in Canada. It can be argued that shared timing of entrance and shared place of settlement are conducive to the preservation of traditional forms of behaviour. Diffusion of new types of behaviour and ideas through imitation and/or informal communication is hampered under such conditions.

The fact that the Canadian immigration pattern was one in which distinct cultural groups entered Canada at specified periods of time had another effect related to, yet separate from, the preservation of traditional behavioural patterns. The timing of the entrance of a group, in conjunction with its particular demographic pattern, affected the general trend of Canadian fertility decline accounting, to some degree, for Canadian deviation from the typical western model.

Because immigration brought variable groups into Canada, and because the pattern of immigration fostered the continuation of traditional behavioural patterns, Canada was characterized by heterogeniety in marriage and marital fertility levels. No "one" pattern of demographic behaviour existed. However, this heterogeniety has disappeared, gradually but markedly, as the convergence in cultural differentials exemplifies. The Canadian fertility

transition was one in which different groups forged out a shared pattern. Traditional influences exerted a short-term effect only. A new cultural complex has been identified, one that previously distinct groups hold in common. Thus, one unique feature of the Canadian fertility experience was the transition from diverse patterns to a commonly shared one. As such, there was a number of separate demographic transitions in Canada, each taking different paths depending upon the mix of marital fertility and nuptiality level that characterized traditional behaviour.

The observation of convergence in cultural differentials in nuptiality and marital fertility, coupled with the strength of those differentials at earlier time periods, suggests that the role of the cultural influence upon demographic behaviour changes over time and further indicates that a variable can be of major importance at one point in time but cease to be relevant at later points in time. Thus, another lesson to be learned from the Canadian fertility experience is that causal factors are not necessarily static over the course of fertility transition, a feature that complicates any analysis of fertility change covering an extended time period.

Thus, the Canadian fertility transition is one that lends itself to an examination of the role of the cultural aspect in demographic behaviour. This is not to suggest that other factors are unimportant or that the Canadian

experience is an easily generalizable one. Rather, the aim here has been to outline the particular operation of cultural factors and, in so doing, provide one framework for viewing the Canadian fertility transition.

Footnotes

[1]As eastern Europeans had not yet settled in Canada in the middle of the nineteenth Century, one cannot know whether nuptiality differentials would have widened and then narrowed, as was the case with marital fertility differentials.

[2]This is not to say that the shared, Canadian pattern is not a modern one. Rather, the emphasis is upon the fact that the new pattern did not emerge from a commonly shared traditional one.

[3]One can speculate that the increased emphasis upon individualism in the personal sphere is a response to decreased individualism in an occupational structure more and more governed by bureaucratic patterns of social organization.

[4]No national data exist concerning the incidence of common-law marriage in Canada. However, casual observation, and American information (Glick and Norton, 1977), suggest that it has increased in recent years. Even if only visibility, rather than actual occurrence, has risen, that itself suggests a change in attitude signalling greater permissivity in family living arrangements.

[5]If so, high rates of divorce may reflect a situation in which expectations concerning the marital union are unrealistically high.

[6]Which can be maintained in the absence of formal marriage.

CHAPTER VIII

CONCLUSION

A number of conclusions may be drawn concerning the Canadian fertility transition. These conclusions bear on the debates existing within demographic transition theory, as outlined in the Introduction, and as well are concerned with other issues that have come to light upon an examination of the trend of, and factors involved in, fertility change in the Canadian case. This chapter seeks to summarize major findings, organizing them so as to provide an overview of Canadian fertility transition.

The overall trend of fertility change from 1851 to 1971 in Canada can be viewed as one involving four distinct stages, with the initial stage characterized by a fertility level more than twice as high as in the last stage. In regard to large-scale fertility decline accompanying social and economic development, the Canadian experience is a typical one. All western, industrial societies are now characterized by low fertility and were characterized by high rates in the past, although the levels of past high fertility tended to vary from society to society.[1] Also, the upswing in fertility after World War II, the third stage

in the Canadian case, was a feature common to western populations. The uniqueness of the Canadian fertility transition lies in the large declines experienced in the first stage and the plateau, a period of relative constancy, of the second stage.

Both unique features can be explained with the introduction of the variable of nuptiality into the examination of fertility transition, as the component analysis performed in Chapter IV reveals. In Canada, the first stage was characterized by declines in both marital fertility and female proportions married,[2] which operated together to affect a much greater decline in overall fertility than if either factor alone was operating. Similarly, the plateau of the second stage resulted from the combined effects of the two variables, although in this case, the variables operated in opposite directions, serving to cancel out one another.

These findings exemplify the theoretical importance of analyzing the independent effects of separate factors operating to determine fertility. At first glance, the large declines in the first stage, in the face of only nascent social and economic change, and the discontinuation of decline in the second stage, in a period of rapid social and economic development, seem discrepant with the general framework of demographic transition theory, which links fertility decline with increasing modernization. However,

when the nuptiality variable and the marital fertility variable are considered separately in their effects on overall fertility, the pattern of fertility change in the first two stages seems less anomalous. Marital fertility commenced to decline around 1871,[3] in conjunction with the introduction of major industrialization into Canada, and continued to steadily decline throughout the remainder of the first stage and the entirety of the second stage, as industrialization and urbanization continued. Thus, the course of marital fertility decline is congruent with the expectations of demographic transition theory. It was the nuptiality variable that operated to affect the peculiarity in trend, facilitating overall decline in the first stage and hampering it in the second stage.

Thus, it can be said that, in the first stage, the Canadian population was characterized by Malthusian limitation, and increasingly so over the course of that stage, and by the introduction of non-Malthusian limitation. The second period witnessed a continuation of the non-Malthusian control mechanism, coupled with a tendency to abandon Malthusian control.

That Canada was initially characterized by Malthusian control illustrates the transference of a behavioural pattern from one area, western Europe, to another, Canada. Canada, in the nineteenth Century, with a population derived, in the main, from western Europe, as

earlier discussions concerning migration patterns in Canada have indicated, exhibited a pattern of age at marriage and proportions married corresponding with that experienced by populations in western Europe. The introduction of non-Malthusian control into Canada in the first stage was partially a function of increased social and economic development, and also partially the result of the in-migration of persons from urban parts of western Europe, typified by relatively low marital fertility,[4] and the out-migration of persons of areas within Canada characterized by high marital fertility.

The increase in female nuptiality, a tendency to the abandonment of Malthusian limitation, in the second stage was, in large part, the result of the in-migration of persons to Canada from areas of Europe characterized by a non-European marriage pattern, i.e., the eastern parts of Europe. They, too, transferred to Canada their particular pattern of marriage behaviour.

Thus, the course of fertility change in the first two stages resulted from the combined action of a lowering marital fertility, which paralleled socioeconomic development and which partially reflected net migration effects, and differing levels of nuptiality that were, in part, affected by the pattern of in-migration into Canada. The joint effects of marital fertility and female nuptiality operated to determine the distinctive trend of fertility in

the early stages, with change in both variables having migration-related aspects.

Not only did the joint effects of marital fertility and female nuptiality affect the course of fertility change in Canada as a whole, but also provincial variations in fertility level and change. For example, Quebec was characterized by high levels of, and late commencement of sustained decline in, marital fertility in conjunction with relatively low levels of female nuptiality. On the other hand, the prairie provinces registered initially high levels of female nuptiality and relatively low levels of marital fertility.[5] Thus, different areas within Canada were characterized by different mixes in level of nuptiality and level of marital fertility. This finding corresponds to evidence gleaned from the study of provincial fertility in Europe (Coale, 1969; Demeny, 1968; Knodel, 1974; Livi-Bacci, 1971; Livi-Bacci, 1977).

These differential mixes in Canada exerted an effect upon the content of the trend of fertility decline. Where marital fertility was high and resistant to early reduction, as in Quebec, once it declined, its pace was a rapid one. Where control of fertility within marriage was accepted earlier, the path of decline was much less steep. Where female nuptiality was initially low, its eventual increase was substantially larger than in areas, like the prairies, where initial levels were high. Thus, a number of

transitions occurred in Canada, a function of differential combinations in early levels of nuptiality and marital fertility, and resulting in provincial convergence in overall fertility level, and in both of its major components, marital fertility and female nuptiality.

The differential combinations, as well as eventual convergence, bear on a number of issues debated within demographic transition theory. It appears that the variable of culture exerted an effect upon Canadian fertility transition, at least in the early stages. At the provincial level, variations in level of nuptiality and marital fertility corresponded with differentials in ethnic/religious composition. In terms of marital fertility, provincial variations did not become marked until after sustained decline began to be registered in Canada as a whole, i.e., after 1871. This finding suggests that it is the timing of the acceptance of control of fertility within marriage that is particularly influenced by ethnic/religious factors. Also, ethnic differentials in children ever-born per ever-married woman and proportion of women married at various age groups were strong, at least at the earlier periods for which such data are available.[6]

It appears that cultural factors operated to determine demographic response, in the sense of affecting the initial acceptance of family limitation behaviour and affecting marriage behaviour.[7] However, while cultural

differentials in level of marital fertility and female nuptiality were strong in the past, they tended to disappear over the course of this century. It can be concluded that the Canadian experience suggests that the cultural influence over demographic behaviour is a short term one, important in the initial stages of transition only. Thus, this research supports the contention that cultural variables are, or at least can be, of significance in transition, but adds the qualification that a time dimension is involved in the operation of the cultural factor.

The existence of ethnic/religious differentials in marital fertility behaviour, followed by convergence, has another implication for demographic transition theory. It is possible to identify leading and lagging groups in Canada in terms of the acceptance of control of fertility within marriage; British Protestants, and French Catholics, respectively. These groups have tended to be situated in geographically distinct parts of Canada, particularly in the case of the French Canadians. It can be argued that diffusion of family limitation attitudes, knowledge and practices is hampered to the degree that separate linguistic, ethnic, and religious groups exist and are regionally-based. However, once the barriers of resistance are overcome, diffusion occurs rapidly. Thus, the Canadian evidence points to the existence of leading and lagging sectors, in terms of family limitation behaviour, with the

time gap in acceptance related to the existence of culturally distinct groups residing in geographically separate locations. In terms of the debate within demographic transition theory concerning the role of diffusion, the Canadian experience is supportive of the argument that diffusion is, in fact, an important process involved in transition, and suggests that its role will be differentially important depending upon population diversity, along cultural lines, and the degree to which culturally distinct groups are geographically concentrated.

In terms of marriage behaviour, however, leading and lagging groups cannot easily be identified, at least in terms of ethnic background. Western European-derived groups registered the relatively low levels of nuptiality that corresponded to their home locations. The later-arriving eastern European-derived populations, similarly, exhibited marriage behaviour corresponding to their areas of departure. While nuptiality levels in Canada underwent increase over the course of the twentieth Century, one would hestitate to argue that the traditional marriage behaviour of non-western European-derived populations was being diffused to western European-origin Canadians. It seems likely that new forces were at work, affecting an overall increase in nuptiality, independent of a diffusion effect. Thus, the view here is that one aspect of fertility transition, marital fertility decline, can be subsumed by a

lead-lag framework, with diffusion as an operative process, whereas the nuptiality variable, at least in the Canadian case, cannot be so conceptualized.

The findings concerning the joint roles played by marital fertility and female nuptiality in the Canadian fertility transition have other theoretical implications. A negative relationship between nuptiality and marital fertility was found, in two separate senses. From a static point of view, in the early stages of transition, a negative relationship existed, as provinces high on one variable tended to be low on the other. This finding has similarly been observed in European populations (Demeny, 1968:514; Knodel, 1974:73; van de Walle, 1968:499). It appears that, initially, population groups in Canada tended to favour one mechanism of fertility control over the other and that the choice tended to be related with cultural factors. From a more dynamic point of view, a negative relationship existed in the sense that changes in the two variables were in opposite directions. The long term change in nuptiality was one of increase, whereas the overall change in marital fertility was one of decrease.[8] Of course, overall decrease in marital fertility was much greater than overall increase in female nuptiality, else fertility decline would not have eventuated.

Thus, from both the static and dynamic stances, a negative relationship between these two variables can be

documented in the Canadian case. This finding is a necessary one in order to address the debate concerning these two variables within demographic transition theory. It will be recalled that the debate focusses upon the direction of causation involved in the relationship between these variables. One hypothesis is that declines in marital fertility cause increases in female nuptiality, whereas the other states that increases in nuptiality lead to declines in marital fertility. The Canadian evidence concerning this debate is somewhat ambiguous. On the one hand, initial decreases in marital fertility were preceded by decreases in female nuptiality. This phenomenon was particularly marked in the province of Ontario, the leader in industrial development. It appears, then, that the initial Canadian demographic response to industrialization was two-fold, with joint decreases in both variables, a finding expected by neither hypothesis.[9] In the second stage of fertility in Canada, the two variables moved in opposite directions. However, it is difficult to impute causality. On the one hand, it could be argued that the declines in marital fertility in the first stage allowed for the increase in nuptiality. However, it has been argued that the increase in nuptiality was not internally generated, but rather resulted from the influx of migrants from areas of Europe characterized by a non-European marriage pattern.

Certain data are supportive of the first hypothesis.

Ever-married women aged over 45 in 1961 and 1971, who generally married prior to the upswing in nuptiality that occurred after 1941, displayed completed family sizes that decrease with decreasing age. This finding tends to suggest that declines in marital fertility preceded significant decrease in average age at marriage.

Also, the Canadian data reveal that populations characterized by initially high levels of nuptiality need not undergo a significant Malthusian transition, but can directly move to non-Malthusian control. It seems likely that such a phenomenon can occur only when it is possible for a high nuptiality population to borrow contraceptive knowledge and practices from other populations or sub-populations. This finding can be viewed, to some extent, as supportive of the second hypothesis, in that sense that nuptiality restriction is an oppressive mechanism which will be avoided by a population if the means to do so are available.

The conclusion that can be made concerning the relationship between nuptiality and marital fertility, based on the Canadian evidence, is that the relationship need not always be negative and, when it can be so documented, the indication that change in one variable precedes change in the other is not always clearcut. The imputation of causality is made difficult by this last fact and the added one that populations do not exist in isolation. In regard

to this last point, it seems that the diffusion of behaviour from one group to another can effect the relationship between the two variables over time.

Certain evidence has come to light concerning the nature of the "baby boom," the upswing in fertility after World War II that affected a major fluctuation in the Canadian fertility transition and accounted for the existence of the third stage. It has been shown that the increased fertility, was, in large part, the result of heightened nuptiality, with marital fertility increasing a relatively small degree and only in the decade 1941-1951. Like in other western populations, the end of World War II signalled the end of the Malthusian control mechanism.

While period marital fertility indicated an increase between 1941 and 1951, the data on children ever-born per ever-married woman showed no significant increase over the "baby boom" years. In other words, completed family size did not increase at this time. Rather, the "baby boom" involved a shift in the timing of childbearing, as revealed in the data concerning age-specific marital fertility, which showed that married women in older age groups experienced declining rates during this time period, and in the calculations on average age at childbearing, which revealed a marked decline. The fact that women were bearing children at younger ages was, in turn, related to the decrease in age at marriage that was particularly marked at this time.

Also, the "baby boom" era was characterized by a trend away from no-child and one-child families.

While Canadian women as a whole registered no increases in family size during the "baby boom," some sub-populations experienced increases. The groups characterized by increases were the groups typified by relatively small family sizes in earlier times, i.e., women of British origins, Protestant and Jewish women, and women of higher levels of educational attainment. Other groups, characterized by higher levels of marital fertility in past times, registered decreases in completed family size. As a result of these counterbalancing trends, the Canadian average data on completed family size indicated no change.

It is significant that groups characterized by "good records" in family limitation were the ones that underwent increases in completed family size, as it bears on the debate concerning the role of contraceptive technology, as opposed to motivation, that exists within demographic transition theory. One can argue that the particular groups of women that underwent increases in completed family size would be less likely to make contraceptive "mistakes" and, therefore, the increase reflected a desire, i.e., motivation, to have larger-sized families. However, it will be noted that, at least in the case of British-origin women, large increases in nuptiality were experienced at this time as well. Given the documented relationship between age at

marriage and completed family size, it could be argued that the increases in completed family size reflected changed marriage behaviour more than changed family size motivations.[10] Thus, in terms of the increase in completed family size experienced by some Canadian married women at mid-century, it is not clear as to whether "motivation" or "mistake" was the major factor involved. However, a more long-range view of change in Canadian fertility is supportive of the motivational school, as major decreases in marital fertility were registered at a time when sophisticated contraceptive techniques were not available and were achieved through methods requiring high levels of motivation to be effective.

Despite the increases in completed family size experienced by sub-populations of Canadian women, the major variable at work in affecting the upswing in fertility was nuptiality. This can be seen most clearly in the rural/urban differences in fertility that have come to light. In terms of the total fertility rate, only rural women registered an increase in fertility between 1941 and 1951. If Canada had been entirely urban, other things equal, no "baby boom" would have occurred. However, the data on children ever-born per ever-married woman revealed no increase for rural women during the "baby boom" years. Thus, the large increase in total fertility that characterized rural areas was due to increases in nuptiality. This

point has been substantiated with data concerning proportions single, which indicated a larger reduction for rural women than urban women.[11] It can be argued, then, that the Canadian "baby boom" was largely a rural phenomenon, in that the major factor accounting for it, increased female nuptiality, was experienced to a larger degree by rural women than urban women.

While nuptiality played an important role in the determination of the "baby boom," when one is considering the entire fertility transition, its effect was small in comparison with marital fertility. It was declining marital fertility that accounted for the Canadian fertility transition from high to low rates. All groups in Canada, over the time period under consideration, experienced substantial declines in marital fertility. While this fact is an important one, emphasizing commonality in demographic response to social and economic development, equally important is the existence of differentials in level and path of decline.

At earlier times, high levels of marital fertility characterized women in rural locations, of low family income, of low levels of educational attainment, of Catholic background, and of French ethnicity. There is a hint that the differentials, although present at the time when data first became available, became larger[12] after decline was well on its way. In other words, sub-

populations differed more in the timing of acceptance of the control of fertility within marriage, than in initial levels of marital fertility.

This century has witnessed a convergence in marital fertility along certain variables and a continuation of rather strong differentials along other variables. Convergence has occurred within variables that may be termed cultural, i.e., ethnicity and religion. Variables more closely aligned with economic factors, i.e., place of residence, income, and educational attainment, have continued to exert an important influence upon marital fertility behaviour. Of particular importance is the variable of educational attainment. In 1971, for women aged over 45, the ratio of the completed family size of women with elementary school to women with university education was larger than the ratio of the highest fertility group to the lowest fertility group along any other variable.[13] Also, large ratios can be observed for women under age 45 in 1971, indicating that education affects the timing of child-bearing as well as eventual family size.

It can be concluded that the cultural influence upon marital fertility is greatest in determining initial acceptance of fertility control within marriage. After such behaviour becomes acceptable, the speed of decline can be so rapid in initially lagging groups that they come to exhibit levels of marital fertility comparable with that of

initially leading groups. Thus, as marital fertility becomes increasingly under control, the grounds for differing levels move out of the realm of traditional cultural dictates. This point substantiates the one made earlier, that the determining role of culture in demographic behaviour is time-bound. The fact that economic variables[14] continue to determine level of marital fertility, while cultural factors have ceased to play such a role, suggests that cultural influences mediate between economic variables and marital fertility and that that mediating effect is a short term one only.

To summarize, this research has been concerned with documenting fertility transition in Canada from 1851 to 1971 and with the factors, both demographic and sociological, so involved. Together, changes in marital fertility and female nuptiality behaviour accounted for the change in fertility and its trend.

Canada shares with other western societies in undergoing a significant reduction in fertility concomitant with increasing social and economic development. This common response to modernization effects cannot be over-emphasized. In one sense, fertility transition can be viewed as representing a commonality in response to modernization, transcending ideological, cultural, historical, and social differences.

Yet certain distinctive features of Canadian society

resulted in a fertility transition with unique characteristics. These features, related amongst themselves, include high cultural diversity, a pattern of immigration characterized by discreteness in both the timing of entrance and the areas of settlement of various ethnic groups, and the lack of a traditional pattern of demographic behaviour. As a result, Canadian fertility transition was distinctive in both its trend and its content. As such, the Canadian case represents a demographic laboratory that allows for the examination of the role of culture in fertility transition, the relationship between marital fertility and nuptiality change, and the role of diffusion in transition. As discussed, each of these three topics is the subject of considerable debate within demographic transition theory.

Although it cannot be argued that the Canadian experience is an easily generalizable one, given its unique characteristics, certain findings suggest a cautious optimism may be warranted in the case of fertility transition in contemporary third world countries. The documented finding that marital fertility can decline very quickly in a late-accepting population once initial barriers to the approval of fertility control within marriage are overcome suggests that the path of decline may be more rapid in third world countries than it was in western societies. Also, while overall fertility decline in Canada was hampered

by a generally increasing female nuptiality, such an occurrence in third world societies is not likely, given their traditional levels of female nuptiality of the non-European variety. Last, the finding that one sub-population in Canada was able to affect major fertility decline without undergoing a Malthusian transition, but by borrowing contraceptive knowledge and practices from other groups, suggests that fertility decline in developing countries can be accomplished by an acceptance of family limitation behaviour only. However, if marriage behaviour changes substantially as well, overall fertility decline would be facilitated.

Footnotes

[1]Overseas populations, like Canada, exhibited higher initial fertility rates than did the populations of western Europe.

[2]The declines in female nuptiality were particularly marked in the earlier part of the first stage.

[3]1871 is the year at which decline from the 1851 level exceeded 10 percent.

[4]Also, the introduction of these people into Canada could account, to some degree, for the decrease in female nuptiality in the first stage.

[5]Data on marital fertility for the prairie provinces are only reliable since 1921. In that year, the marital fertility rate registered in the prairies was not high, relative to Quebec and the Maritime provinces.

[6]However, it will be noted that provinces varied in level of socioeconomic development and that ethnic/religious groups were characterized by differences in extent of incorporation into industrial society. Thus, it is difficult to assess the separate effects of cultural and socioeconomic factors.

[7]This is not to say that other factors were not involved, but rather that ethnic/religious influences also operated to some degree.

[8]However, within each fertility stage, a negative relationship was not always observed. Only the second and third stages were so characterized. The first and fourth stages experienced decreases in both variables.

[9]Neither hypothesis can handle this finding because both hypotheses are predicated on a negative relationship between marital fertility and female nuptiality, which was not observed in this case.

[10]The argument in this case is that younger age at marriage is associated with increases in completed family size, as women are exposed to the risk of childbearing for a longer period of time and during the years of peak fecundity. Hence, an unwanted birth (or births) is more likely.

[11]The fact that rural women experienced substantial increases in nuptiality without undergoing an increase in completed family size lends support to the argument that increase in nuptiality was not the major factor involved in affecting the increase in completed family size for the groups that experienced increases during the "baby boom" years.

[12]This is evident in the data concerning place of residence (rural/urban), ethnicity, and religion.

[13]The other variables are place of residence (rural/urban), ethnicity, income, and religion.

[14]Here, educational attainment is included as an economic variable.

BIBLIOGRAPHY

Adelman, Irma and Cynthia Taft Morris
1966 "A quantitative study of social and political determinants of fertility." Economic Development and Cultural Change 14:129-57.

An American Physician
1974 [1855] "Reproductive control or a rational guide to matrimonial happiness." In Birth Control and Family Planning in Nineteenth Century America. New York: Arno Press.

Barclay, George W.
1958 Techniques of Population Analysis. New York: Wiley.

Beaver, Steven E.
1975 Demographic Transition Theory Reinterpreted: An Application to Recent Natality Trends in Latin America. Lexington, Mass.: Heath.

Blake, Judith and Prithwis Das Gupta
1975 "Reproductive motivation versus contraceptive technology: Is recent American experience an exception?" Population and Development Review 1:229-49.

Bliss, Michael
1970 "Pure books on avoided subjects: Pre-Freudian sexual ideas in Canada." Historical Papers of The Canadian Historical Association: 89-108.

Bogue, Donald J.
1969 Principles of Demography. New York: Wiley.

Brower, E. J., D. L. Ralston and H. G. Page
1956 "Canadian population statistics." Population Index 22:89-100.

Brown, Robert Craig and Ramsay Cook
1974 Canada 1896-1921: A Nation Transformed. Toronto: McClelland and Stewart.

Burch, Thomas K.
1975 "Theories of fertility as guides to population policy." Social Forces 54:126-38.

Busfield, Joan and Michael Paddon
1977 Thinking About Children: Sociology and Fertility in Post-War England. Cambridge: Cambridge University Press.

Caldwell, John C.
1976 "Toward a restatement of demographic transition theory." Population and Development Review 2:321-66.

Carlsson, Gosta
1966 "The decline in fertility: Innovation or adjustment process." Population Studies 20:149-74.

Clement, Wallace
1975 The Canadian Corporate Elite: An Analysis of Economic Power. Toronto: McClelland and Stewart.

Coale, Ansley J.
1969 "The decline of fertility in Europe from the French Revolution to World War II." Pp. 3-24 in S. J. Behrman, Leslie Corsa, Jr. and Ronald Freedman (eds.), Fertility and Family Planning: A World View. Ann Arbor: University of Michigan Press.

1973 "The demographic transition reconsidered." International Population Conference. Liege, Belgium: International Union for the Scientific Study of Population.

Coale, Ansley J. and Paul Demeny
1966 Regional Model Life Tables and Stable Populations. Princeton, N.J.: Princeton University Press.

Coale, Ansley J. and Edgar M. Hoover
1958 Population Growth and Economic Development in Low-Income Countries. Princeton, N.J.: Princeton University Press.

Coale, Ansley J. and Melvin Zelnik
1963 New Estimates of Fertility and Population in the United States. Princeton, N.J.: Princeton University Press.

Coats, R. H.
1923 "The growth of population in Canada." Annals of the American Academy of Political and Social Science 107:1-6.

Collishaw, Neil
1976 Fertility in Canada. 1971 Census of Canada, Profile Studies Catalogue 99-706. Ottawa: Statistics Canada.

Cross, Michael S.
1974 The Workingman in the Nineteenth Century. Toronto: Oxford University Press.

Cutright, Phillips, Michael Hout and David R. Johnson
1976 "Structural determinants of fertility in Latin America: 1800-1970." American Sociological Review 41:511-27.

Davis, Kingsley
1955 "Institutional patterns favoring high fertility in underdeveloped areas." Eugenics Quarterly 2:33-9.

1963 "The theory of change and response in modern demographic history." Population Index 29:345-66.

1972 "The American family in relation to demographic change." Pp. 239-65 in Charles F. Westoff and Robert Parke, Jr. (eds.), U.S. Commission on Population Growth and the American Future, Research Reports, Volume I, Demographic and Social Aspects of Population Growth. Washington, D.C.: Government Printing Office.

Davis, Kingsley and Judith Blake
1956 "Social structure and fertility: An analytic framework." Economic Development and Cultural Change 4:211-35.

Demeny, Paul
1968 "Early fertility decline in Austria-Hungary: A lesson in demographic transition." Daedalus 97:502-22.

1975 "Letters." Scientific American 232(5):6-8.

Dickens, Bernard M.
1975 "Eugenic recognition in Canadian law." Osgoode Hall Law Journal 13:547-77.

Dixon, Ruth B.
1971 "Explaining cross-cultural variations in age at marriage and proportions never marrying." Population Studies 25:215-33.

Dominion Bureau of Statistics (later Statistics Canada)
1851-2-1971 Censuses of Canada. Ottawa: King's (later Queen's) Printer.

1921-1971 Vital Statistics Reports. Ottawa: King's (later Queen's) Printer.

Dominion Bureau of Statistics
1924 Canada Year Book 1922-23. Ottawa: King's Printer.

1944 Trends in Canadian Family Size: A Preliminary Report. Bulletin F-1. Ottawa: King's Printer.

1945 Cultural Differences in Family Size, Canada, 1941. Bulletin F-2. Ottawa: King's Printer.

1946 Economic Differences in Family Size, Canada, 1941. Bulletin F-5. Ottawa: King's Printer.

Drake, Michael
1972 "Fertility controls in pre-industrial Norway." Pp. 185-98 in D. V. Glass and Roger Revelle (eds.), Population and Social Change. London: Edward Arnold.

Easterbrook, W. T. and Hugh G. J. Aitken
1967 Canadian Economic History. Toronto: MacMillan.

Firestone, Otto Jack
1969 Industry and Education: A Century of Canadian Development. Ottawa: University of Ottawa Press.

Friedl, John and Walter S. Ellis
1976 "Celibacy, late marriage and potential mates in a Swiss isolate." Human Biology 48:23-35.

Friedlander, Dov
1969 "Demographic responses and population change." Demography 6:359-81.

Gagnon, John H. and William Simon
1970 "Perspectives on the sexual scene." Pp. 1-21 in John H. Gagnon and William Simon (eds.), The Sexual Scene. Aldine.

Gerin, Leon
1964 "The French-Canadian family - its strengths and weaknesses." Pp. 32-57 in Marcel Rioux and Yves Martin (eds.), French-Canadian Society. Toronto: McClelland and Stewart.

Glass, D. V.
1969 "Fertility trends in Europe since the Second World War." Pp. 25-74 in S. J. Behrman, Leslie Corsa, Jr. and Ronald Freedman (eds.), Fertility and Family Planning: A World View. Ann Arbor: University of Michigan Press.

Glick, Paul C. and Arthur J. Norton
1977 "Marrying, divorcing, and living together in the U.S. today." Population Bulletin 32:1-39.

Goode, William J.
1963 World Revolution and Family Patterns. Glencoe, Ill.: Free Press.

Grabill, Wilson H., Clyde V. Kiser and Pascal Whelpton
1958 The Fertility of American Women. New York: Wiley.

Grindstaff, Carl F.
1975 "The baby bust: Changes in fertility patterns in Canada." Canadian Studies in Population 2:15-22.

Grindstaff, Carl F., Craig Boydell and Paul C. Whitehead (eds.)
1971 Population Issues in Canada. Toronto: Holt, Rinehart and Winston.

Hajnal, John
1953 "Age at marriage and proportions marrying." Population Studies 7:111-36.

1965 "European marriage patterns in perspective." Pp. 101-43 in D. V. Glass and D. E. C. Eversley (eds.), Population in History: Essays in Historical Demography. London: Edward Arnold.

Henripin, Jacques
1957 "From acceptance of nature to control: The demography of the French Canadians since the seventeenth Century." Canadian Journal of Economics and Political Science 23:10-19.

1972 Trends and Factors of Fertility in Canada. 1961 Census Monograph. Ottawa: Statistics Canada.

Henripin, Jacques and Jacques Legare
1971 "Recent trends in Canadian fertility." Canadian Review of Sociology and Anthropology 8:106-18.

Henripin, Jacques and Yves Peron
1972 "The demographic transition in the province of Quebec." Pp. 213-31 in D. V. Glass and Roger Revelle (eds.), Population and Social Change. London: Edward Arnold.

Jones, Elise F.
1971 "Fertility decline in Australia and New Zealand: 1861-1936." Population Index 37:301-38.

Kalbach, Warren E.
1970 The Impact of Immigration on Canada's Population. 1961 Census Monograph. Ottawa: Statistics Canada.

Kalbach, Warren E. and Wayne W. McVey
1971 The Demographic Bases of Canadian Society. Toronto: McGraw-Hill.

Kennedy, Robert E.
1973 The Irish: Emigration, Marriage and Fertility. Berkeley: University of California Press.

Keyfitz, Nathan
1950 "The growth of Canadian population." Population Studies 4:47-63.

Knodel, John E.
1974 The Decline of Fertility in Germany: 1871-1939. Princeton, N.J.: Princeton University Press.

1977 "Family limitation and the fertility transition: Evidence from the age patterns of fertility in Europe and Asia." Population Studies 31:219-49.

Knodel, John E. and Mary Jo Maynes
1976 "Urban and rural marriage patterns in imperial Germany." Journal of Family History 1:129-68.

Lawr, Douglas A. and Robert D. Gidney
1973 Educating Canadians: A Documentary History of Public Education. Toronto: Van Nostrand Reinhold.

Leasure, J. William
1963 "Factors involved in the decline of fertility in Spain: 1900-1950." Population Studies 16:271-85.

Legare, Jacques
1974 "Demographic highlights on fertility decline in Canadian marriage cohorts." Canadian Review of Sociology and Anthropology 11:287-307.

Livi-Bacci, Massimo
1968a "Fertility and nuptiality changes in Spain from the late eighteenth to the early twentieth Century. Part 1." Population Studies 22:83-102.

1968b "Fertility and nuptiality changes in Spain from the late eighteenth to the early twentieth Century. Part 2." Population Studies 22:211-34.

1971 A Century of Portuguese Fertility. Princeton, N.J.: Princeton University Press.

1977 A History of Italian Fertility During the Last Two Centuries. Princeton, N.J.: Princeton University Press.

Long, Larry H.
1970 "Fertility patterns among religious groups in Canada." Demography 7:135-149.

MacDonald, Norman
1966 Immigration and Colonization: 1841-1903. Toronto: MacMillan.

McDonald, Peter F.
1975 Marriage in Australia: Age at first Marriage and Proportions Marrying, 1860-1971. Canberra: Australian National University Press.

McInnis, R. M.
1974 "The composition of Canada's population growth: 1871-1921." Unpublished: Queen's University.

McIntyre, Robert J.
1975 "The Bulgarian anomaly: Demographic transition and current fertility." Paper presented at the Annual Meetings, Population Association of America, Seattle, Wash.

Magrath, C. A.
1910 Canada's Growth and Some Problems Affecting It. Ottawa: Mortimer.

Marsden, Lorna R.
1972 Population Probe. Copp Clark.

Masnick, George S. and Joseph A. McFalls, Jr.
1976 "The twentieth-Century American fertility swing." Journal of Family History 1:217-44.

Miner, Horace
1939 St. Denis: A French-Canadian Parish. Chicago: University of Chicago Press.

Mitchell, B. R.
1975 European Historical Statistics: 1750-1970. London: MacMillan.

Okediji, Francis O.
1974 "Changes in individual reproductive behaviour and cultural values." Lecture series on population. Bucharest, Rumania: International Union for the Scientific Study of Population.

Petersen, William
1960 "The demographic transition in the Netherlands." American Sociological Review 25:334-47.

Philipps, Charles E.
1957 The Development of Education in Canada. Toronto: Gage.

Pierce, Rachel M. and Griselda Rowntree
1961 "Birth control in Britain: Part II. Contraceptive methods in the last thirty years." Population Studies 15:121-60.

Pool, D. Ian and M. D. Bracher
1974 "Aspects of family formation in Canada." Canadian Review of Sociology and Anthropology 11:308-23.

Report of the Royal Commission on Dominion-Provincial
1940 Relations. Book I. Ottawa: King's Printer.

Ryder, Norman B.
1954 "Components of Canadian population growth." Population Index 20:71-80.

1958 "The reproductive renaissance north of the Rio Grande." Annals of the American Academy of Political and Social Science 316:18-24.

1959 "Fertility." Pp. 400-36 in Philip M. Hauser and Otis Dudley Duncan (eds.), The Study of Population: An Inventory and Appraisal. Chicago: University of Chicago Press.

1967 "The character of modern fertility." Annals of the American Academy of Political and Social Science 369:26-36.

1971 "The emergence of a modern fertility pattern: United States, 1917-66." Pp. 99-123 in S. J. Behrman, Leslie Corsa, Jr. and Ronald Freedman (eds.), Fertility and Family Planning: A World View. Ann Arbor: University of Michigan Press.

St. John-Stevas, Norman
1971 The Agonizing Choice: Birth Control, Religion and the Law. London: Eyre and Spottiswoode.

Shryock, Henry S. and Jacob Siegel
1973 The Methods and Materials of Demography. Volumes 1 and 2. Washington, D.C.: U.S. Printing Office.

Sklar, June L.
1974 "The role of marriage behaviour in the demographic transition: The case of Eastern Europe around 1900." Population Studies 28:231-47.

Spencer, Geraldine M.
1971 "Fertility trends in Australia." Demography 8: 247-59.

Stolnitz, George J.
1964 "The demographic transition: From high to low birth rates and death rates." Pp. 30-46 in Ronald Freedman (ed.), Population: The Vital Revolution. Garden City, N.J.: Anchor.

Stone, Leroy O.
1967 Urban Development in Canada. 1961 Census Monograph. Ottawa: Dominion Bureau of Statistics.

Sweezy, Alan
1975 "Letters." Scientific American 232(5):6.

Swinton, Constance
1974 "Population and family planning: An overview." Pp. 9-15 in Benjamin Schlesinger (ed.), Family Planning in Canada: A Sourcebook. Toronto: University of Toronto Press.

Taeuber, Irene B.
1960 "Japan's demographic transition re-examined." Population Studies 14:28-39.

1967 "Demographic transitions and population problems in the United States." Annals of the American Academy of Political and Social Science 369:131-40.

Tepperman, Lorne
1974 "Ethnic variations in marriage and fertility: Canada, 1871." Canadian Review of Sociology and Anthropology 11:324-43.

Thompson, Virginia
1974 "Some religious views on family planning." Pp. 34-47 in Benjamin Schlesinger (ed.), Family Planning in Canada: A Sourcebook. Toronto: University of Toronto Press.

Thompson, Warren S. and David T. Lewis
1965 Population Problems. New York: McGraw-Hill.

Thompson, Warren S. and P. K. Whelpton
1933 Population Trends in the United States. New York: McGraw-Hill.

Timlin, Mabel F.
1960 "Canada's immigration policy: 1896-1910." Canadian Journal of Economics and Political Science 26:517-32.

Tsubouchi, Yoshihiro
1970 "Changes in fertility in Japan by region: 1920-1965." Demography 7:121-34.

United Nations, Department of Economic and Social Affairs.
1967 Methods of Estimating Basic Demographic Measures from Incomplete Data. Manual 4, ST/SOA/Series A. Population Studies, No. 42. New York: United Nations.

van de Walle, Etienne
1968 "Marriage and marital fertility." Daedalus 97:486-501.

van de Walle, Etienne and Louise Kantrow
1974 "Historical demography: A bibliographic essay." Population Index 40:611-23.

van de Walle, Etienne and John Knodel
1967 "Demographic transition and fertility decline: The European case." Contributed Papers. Sydney, Australia: International Union for the Scientific Study of Population.

van de Walle, Francine
1975 "Migration and fertility in Ticino." Population Studies 29:447-62.

Veevers, J. E.
1972 "Factors in the incidence of childlessness in Canada: An analysis of census data." Social Biology 19:266-74.

Weinstein, Jay A.
1976 Demographic Transition and Social Change, Morristown, N.J.: General Learning Press.

Wells, Robert V.
1975 "Family history and demographic transition." Journal of Social History 9:1-19.

Westoff, Charles F.
1973 "Changes in contraceptive practices among married people." Pp. 19-31 in Charles F. Westoff (ed.), Toward The End of Growth. Englewood Cliffs, N.J.: Prentice-Hall.

Yaukey, David
1973 Marriage Reduction and Fertility. Lexington, Mass.: Heath.

APPENDIX A

ESTIMATE OF: FEMALE POPULATION AGED 15-49, BY FIVE-YEAR AGE GROUPS, CANADA AND PROVINCES, 1851-1871; MARRIED FEMALE POPULATION AGED 15-49; BY FIVE-YEAR AGE GROUPS, CANADA AND PROVINCES, 1851-1891 AND 1951; MALE AND FEMALE SINGLE POPULATION AGED 15-54, BY FIVE-YEAR AGE GROUPS, CANADA, 1851-1891

Table I

Number of Females aged 15-49, by Five-Year Age Groups. Canada and Provinces, 1851-1871

Year and Area	Number of Females						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1851							
Canada[1]	108,840	85,670	67,175	52,305	41,054	33,428	29,423
Quebec	53,180	41,975	32,561	25,185	19,847	16,546	15,283
Ontario	55,660	43,695	34,614	27,120	21,207	16,882	14,140
1861							
Canada[2]	166,692	135,355	106,902	83,858	66,207	53,970	47,125
N.S.	19,534	16,922	13,286	10,399	8,256	6,865	6,217
Quebec	66,025	52,717	41,180	32,003	25,182	20,723	18,619
Ontario	81,133	65,716	52,436	41,456	32,769	26,382	22,289
1871							
Canada[3]	194,517	169,417	135,895	108,443	87,080	71,799	62,596
N.S.	20,362	20,240	16,069	12,708	10,159	8,424	7,496
N.B.	15,887	14,258	11,256	8,847	7,040	5,830	5,220
Quebec	67,497	58,980	46,720	36,837	29,335	24,210	21,465
Ontario	90,771	75,939	61,850	50,051	40,546	33,335	28,415

[1]Includes Ontario (Upper Canada) and Quebec (Lower Canada).

[2]Includes Ontario, Quebec and Nova Scotia.

[3]Includes Ontario, Quebec, Nova Scotia and New Brunswick.

Sources: Censuses of Canada: 1851-52 (v. 1, appendices 5 and 6); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 7).

Table II

Number of Married Females aged 15-49, by Five-Year Age Groups. Canada and Provinces, 1851-1891 and 1951

Year and Area	Number of Married Females						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1851							
Canada[1]	11,458	49,015	45,870	41,657	36,363	30,002	22,561
Quebec	5,451	22,388	21,163	19,475	17,313	14,688	11,592
Ontario	6,007	26,627	24,707	22,182	19,050	15,314	10,969
1861							
Canada[2]	9,408	63,268	65,233	63,324	57,515	47,849	34,225
N.S.	616	5,635	6,698	7,117	6,884	6,027	4,458
Quebec	3,934	23,903	24,455	23,681	21,575	18,142	13,378
Ontario	4,858	33,730	34,080	32,526	29,056	23,680	16,389
1871							
Canada[3]	8,867	75,440	84,736	76,994	74,605	60,751	48,341
N.S.	434	7,583	8,440	8,453	8,093	6,844	5,668
N.B.	461	5,901	6,830	5,982	5,991	4,987	4,058
Quebec	3,979	26,526	27,671	26,434	24,399	20,392	16,683
Ontario	3,993	35,430	41,795	36,125	36,122	28,528	21,932
1881							
Canada[4]	8,892	93,392	101,557	99,895	94,101	78,685	64,281
P.E.I.	33	1,777	2,115	2,210	2,171	1,830	1,513
N.S.	659	7,447	9,065	9,659	9,602	8,068	6,655
N.B.	501	6,288	7,054	7,105	6,816	5,772	4,773
Quebec	3,583	30,300	32,246	31,226	29,083	24,129	19,774
Ontario	3,038	42,640	46,156	45,178	42,428	35,651	29,211
Man.	399	2,172	1,987	1,666	1,360	1,035	756
B.C.	499	1,114	1,175	1,145	1,059	816	602
1891							
Canada[4]	11,554	78,493	125,048	115,864	104,933	92,251	77,820
P.E.I.	102	1,093	1,924	2,113	2,162	2,058	1,809
N.S.	802	6,062	9,676	9,565	9,193	8,548	7,642
N.B.	661	4,574	7,266	7,160	6,816	6,227	5,402
Quebec	4,530	26,522	38,157	35,298	31,878	27,887	23,329
Ontario	4,000	32,896	57,128	52,545	47,331	41,474	34,983
Man.	408	3,288	4,925	4,144	3,391	2,659	1,954
B.C.	667	2,037	2,862	2,369	1,935	1,550	1,217

Table II, Continued

Year and Area	Number of Married Females						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1951							
Canada	41,633	282,290	453,796	447,277	420,119	351,820	289,754
Nfld.	1,443	7,292	9,878	9,883	9,331	7,753	6,215
P.E.I.	264	1,604	2,571	2,626	2,541	2,172	1,815
N.S.	2,401	12,624	19,449	19,420	18,293	15,171	12,127
N.B.	2,158	10,373	15,321	14,891	13,805	11,413	9,267
Quebec	7,841	73,074	123,074	120,641	112,568	93,474	76,019
Ontario	15,994	100,341	158,883	155,202	145,754	123,445	104,583
Man.	2,215	15,600	25,456	25,580	24,331	20,495	16,826
Sask.	2,419	16,669	25,930	26,062	24,789	20,874	17,122
Alta.	3,416	21,369	32,583	31,436	28,943	23,746	19,099
B.C.	3,273	22,728	39,752	40,766	39,118	32,826	26,348

[1]Includes Ontario (Upper Canada) and Quebec (Lower Canada).

[2]Includes Ontario, Quebec and Nova Scotia.

[3]Includes Ontario, Quebec, Nova Scotia and New Brunswick.

[4]Refers to present area of Canada, excluding Newfoundland.

Sources: Censuses of Canada: 1851-52 (v. 1, appendices 5 and 6); 1861 (v. 1, General Abstract of Ages); 1871 (v. 2, table 8; 1881 (v. 4, table G); 1891 (v. 4, table H); 1951 (v. 2, table 2).

Table III

Number of Single Males and Females aged 15-54, by Five-Year Age Groups. Canada, 1851-1891

Year and Sex	Number Single							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
1851[1]								
Males	103,003	58,457	31,903	13,386	2,898	3,327	4,146	2,360
Females	96,952	36,010	19,715	8,396	2,038	2,451	2,412	1,928
1861[2]								
Males	163,585	103,017	56,903	24,599	6,091	6,249	5,634	4,261
Females	156,743	70,816	39,739	17,922	5,350	5,285	4,725	3,691
1871[3]								
Males	191,045	117,795	69,261	32,368	7,112	7,543	4,688	2,711
Females	185,650	86,930	52,043	25,445	7,145	7,078	4,566	2,954
1881[4]								
Males	240,098	168,594	89,698	39,153	13,495	7,094	8,054	6,323
Females	233,695	126,345	64,242	26,998	14,879	10,036	9,440	7,777
1891[4]								
Males	260,690	209,291	99,773	57,536	29,770	12,755	9,905	9,094
Females	246,160	159,601	67,948	37,608	21,228	13,836	9,052	9,638

[1]Includes Ontario (Upper Canada) and Quebec (Lower Canada).

[2]Includes Ontario, Quebec and Nova Scotia.

[3]Includes Ontario, Quebec, Nova Scotia and New Brunswick.

[4]Refers to present area of Canada, excluding Newfoundland.

Sources: Censuses of Canada: 1851-52 (v. 1, table 4); 1861 (General Abstract of Ages); 1871 (v. 2, tables 7 and 8; v. 5, table GIII); 1881 (v. 4, table G; v. 2, table X); 1891 (v. 4, Tables H and I).

APPENDIX B

Observed Values of the Components of the Crude Birth Rate and the General Fertility Rate. Canadian Provinces,[1] 1851-1971

Year	LB/M*	x M*/F*	+ IB/UM*[2]	x UM*/F*	= B/F*	x F*/F	x F/T	= B/T
Newfoundland								
1951	218.6	.6606	15.7	.3394	149.7	.4448	.4877	32.5
1961	236.5	.6625	20.7	.3375	163.7	.4272	.4869	34.1
1971	154.2	.6387	29.0	.3613	109.0	.4576	.4903	24.5
Prince Edward Island								
1881	311.2	.4326	4.8	.5674	137.4	.4972	.4974	34.0
1891	293.2	.4316	4.5	.5684	129.1	.4814	.4969	30.9
1901	-	-	-	-	114.1	.4761	.4968	27.0
1911	232.9	.4452	3.8	.5548	105.8	.4715	.5022	25.1
1921	224.4	.5111	5.5	.4889	117.4	.4616	.4935	26.7
1931	186.7	.5344	8.5	.4656	103.7	.4520	.4844	22.7
1941	170.4	.5495	10.2	.4505	98.2	.4693	.4821	22.2
1951	184.9	.6365	17.8	.3635	124.1	.4430	.4898	26.9
1961	193.5	.6626	19.0	.3374	134.6	.4112	.4900	27.1
1971	130.4	.6174	18.6	.3826	87.6	.4332	.4964	18.8
Nova Scotia								
1861	338.8	.4594	5.9	.5406	158.8	.4930	.4995	39.1
1871	311.5	.4768	5.8	.5232	151.5	.4920	.5003	37.3
1881	274.8	.4755	5.1	.5245	133.3	.4890	.4994	32.6
1891	259.6	.4731	4.8	.5269	125.3	.4874	.4958	30.3
1901	-	-	-	-	124.9	.4812	.4916	29.5
1911	228.3	.5173	5.0	.4827	120.5	.4788	.4901	28.3
1921	205.2	.5471	7.8	.4529	115.8	.4801	.4913	27.3
1931	179.7	.5503	12.6	.4497	104.5	.4733	.4870	24.1
1941	166.7	.5616	16.1	.4384	100.7	.5048	.4878	24.8
1951	160.6	.6601	22.4	.3399	113.6	.4745	.4943	26.7
1961	162.2	.6813	25.6	.3187	118.7	.4503	.4922	26.3
1971	107.5	.6462	26.0	.3538	78.6	.4618	.4975	18.1
New Brunswick								
1871	314.3	.5006	6.4	.4994	160.6	.4892	.4892	38.4
1881	278.2	.4947	5.6	.5053	140.4	.4928	.4891	33.9
1891	265.9	.4926	5.3	.5074	133.6	.4911	.4903	32.2
1901	-	-	-	-	129.0	.4878	.4907	30.9
1911	240.5	.5297	5.5	.4703	130.0	.4806	.4889	30.5
1921	242.4	.5630	5.5	.4370	138.9	.4762	.4912	32.5

APPENDIX B, Continued

Year	LB/M*	x M*/F*	+ IB/UM*^{2}	x UM*/F*	= B/F*	x F*/F	x F/T	= B/T
1931	213.7	.5518	9.2	.4482	122.0	.4717	.4890	28.1
1941	197.6	.5584	9.1	.4416	114.4	.4954	.4882	27.7
1951	199.8	.6484	15.4	.3514	135.0	.4643	.4974	31.2
1961	185.4	.6652	17.1	.3348	129.1	.4350	.4942	27.7
1971	119.4	.6308	21.8	.3692	83.4	.4639	.4966	19.2
Quebec								
1851	357.6	.5478	8.8	.4522	199.9	.4646	.4946	46.0
1861	343.0	.5033	7.1	.4967	176.2	.4717	.4891	40.6
1871	318.9	.5125	6.8	.4875	166.8	.4787	.4998	39.9
1881	305.0	.5160	6.6	.4840	160.6	.4849	.5010	39.0
1891	283.5	.5237	6.4	.4763	151.5	.4813	.5001	36.5
1901	-	-	-	-	154.0	.4791	.5000	36.9
1911	269.4	.5364	6.4	.4636	147.4	.4771	.4951	34.8
1921[3]	283.7	.5317	8.7	.4683	154.9	.4850	.5002	37.6
1931	239.6	.5003	7.2	.4997	123.5	.5045	.4965	30.9
1941	204.3	.4992	6.2	.5008	105.1	.5274	.4979	27.6
1951	193.3	.5880	8.6	.4120	117.2	.5149	.4940	29.8
1961	167.3	.6256	10.4	.3744	108.6	.4810	.4996	26.1
1971	87.5	.6082	11.7	.3918	57.8	.5091	.5032	14.8
Ontario								
1851	356.5	.5853	10.3	.4147	212.9	.4710	.4758	47.7
1861	338.4	.5411	8.1	.4589	186.8	.4805	.4803	43.1
1871	305.9	.5354	7.2	.4646	167.1	.4810	.4886	39.3
1881	258.9	.5092	5.5	.4908	134.5	.5059	.4922	33.5
1891	221.1	.4940	4.4	.5060	111.4	.5238	.4942	28.8
1901	-	-	-	-	101.4	.5350	.4976	27.0
1911	185.1	.5344	4.3	.4656	100.9	.5351	.4851	26.2
1921	181.4	.5813	5.5	.4187	107.7	.5210	.4949	27.8
1931	138.2	.5804	8.0	.4196	83.6	.5236	.4904	21.5
1941	120.1	.5979	8.8	.4021	75.4	.5297	.4928	19.7
1951	138.1	.6990	11.0	.3010	99.8	.5038	.4967	25.0
1961	141.6	.7384	14.3	.2616	108.3	.4695	.4974	25.3
1971	93.9	.6814	14.0	.3186	68.4	.4935	.5014	16.9
"West"								
1881	246.9	.6746	10.4	.3254	169.9	.4923	.4485	37.5
1891	295.4	.6252	10.1	.3748	188.5	.5078	.4248	40.6
1901	-	-	-	-	222.1	.5100	.4169	47.2
1911	243.7	.6548	9.4	.3452	162.8	.5333	.4066	35.3

APPENDIX B, Continued

Year	LB/M*	x M*/F*	+ IB/UM*[2]	x UM*/F*	= B/F*	x F*/F	x F/T	= B/T
Manitoba								
1921	213.9	.6279	8.4	.3721	137.4	.5103	.4746	33.3
1931	147.2	.5625	7.0	.4375	85.8	.5365	.4743	21.8
1941	134.6	.5716	6.5	.4284	79.7	.5449	.4819	20.9
1951	146.9	.6740	12.2	.3260	103.0	.5072	.4916	25.7
1961	147.4	.7080	24.1	.2920	111.4	.4614	.4917	25.3
1971	103.0	.6595	29.7	.3405	78.0	.4681	.4995	18.2
Saskatchewan								
1921	211.8	.6923	5.4	.3077	148.3	.4848	.4539	32.6
1931	168.0	.6113	8.2	.3887	105.9	.5081	.4576	24.6
1941	143.8	.5839	7.3	.4161	87.0	.5230	.4670	21.2
1951	155.1	.6791	15.4	.3209	110.3	.4963	.4775	26.1
1961	157.1	.7518	29.9	.2482	125.5	.4290	.4817	25.9
1971	101.8	.6631	32.8	.3369	78.5	.4488	.4918	17.3
Alberta								
1921	192.0	.6912	7.9	.3088	135.2	.5095	.4491	30.9
1931	161.4	.6307	10.5	.3693	105.7	.5242	.4530	25.1
1941	140.7	.6182	9.9	.3818	90.8	.5317	.4644	22.4
1951	160.2	.7008	18.6	.2992	117.8	.5123	.4761	28.7
1961	161.8	.7403	30.7	.2597	127.8	.4740	.4824	29.2
1971	100.1	.6808	28.9	.3192	77.4	.4934	.4915	18.8
British Columbia								
1921	138.0	.6617	3.3	.3383	92.5	.5478	.4407	22.3
1931	104.6	.6089	4.6	.3911	65.5	.5468	.4451	15.9
1941	116.8	.6168	9.0	.3832	75.5	.5364	.4681	19.0
1951	129.1	.7217	20.7	.2783	98.9	.4994	.4877	24.1
1961	131.1	.7393	27.7	.2607	104.1	.4633	.4911	23.7
1971	86.5	.6799	25.4	.3201	67.0	.4800	.4963	16.0

[1]Years for which data are available.

[2]2 percent illegitimacy assumed until 1921.

[3]Data on births taken from Henripin (1972).

Sources: Same as Table XXII.

APPENDIX C

Standardized Crude Birth Rates and General Fertility Rates. Canadian Provinces, 1851[1]-1971

Year	Standardized Crude Birth Rates Allowed to Vary Only: B/F*	F*/F	F/T	Standardized General Fertility Rates Allowed to Vary Only: LB/M*	M*/F*	IB/UM*
Newfoundland						
1951	34.0	44.5	47.1	128.1	239.1	209.2
1961	37.1	42.8	47.0	138.2	239.7	211.4
1971	24.7	45.8	47.4	91.6	231.5	215.0
Prince Edward Island						
1881	31.2	49.8	48.1	180.6	159.9	204.5
1891	29.3	48.2	48.0	170.4	159.5	204.4
1901	25.9	47.7	48.0	-	-	-
1911	24.0	47.2	48.5	136.2	164.2	204.1
1921	26.6	46.2	47.7	131.4	187.1	204.8
1931	23.5	45.3	46.8	110.0	195.2	206.1
1941	22.3	47.0	46.6	100.7	200.5	206.9
1951	28.2	44.4	47.3	109.0	230.7	210.1
1961	30.5	41.2	47.3	113.9	239.8	210.6
1971	19.9	43.4	48.0	78.0	224.1	210.5
Nova Scotia						
1861	36.0	49.4	48.3	196.2	169.2	205.0
1871	34.4	49.3	48.3	180.7	175.2	204.9
1881	30.2	49.0	48.2	159.9	174.8	204.6
1891	28.4	48.8	47.9	151.3	173.9	204.5
1901	28.3	48.2	47.5	-	-	-
1911	27.3	48.0	47.3	133.6	189.3	204.6
1921	26.3	48.1	47.5	120.5	199.6	205.8
1931	23.7	47.4	47.0	106.0	200.8	207.9
1941	22.8	50.6	47.1	98.7	204.7	209.4
1951	25.8	47.5	47.8	95.2	238.9	212.1
1961	26.9	45.1	47.6	96.1	246.3	213.5
1971	17.8	46.2	48.1	65.1	234.1	213.7
New Brunswick						
1871	36.4	49.0	47.3	182.4	183.5	205.2
1881	31.8	49.4	47.3	161.9	181.4	204.8
1891	30.3	49.2	47.4	154.9	180.7	204.7

APPENDIX C, Continued

Year	Standardized Crude Birth Rates Allowed to Vary Only: B/F*	F*/F	F/T	Standardized General Fertility Rates Allowed to Vary Only: LB/M*	M*/F*	IB/UM*
1901	29.3	48.9	47.4	-	-	-
1911	29.5	48.1	47.2	140.5	193.6	204.8
1921	31.5	47.7	47.6	141.6	205.2	204.8
1931	27.7	47.2	47.2	125.3	201.3	206.4
1941	25.9	49.6	47.2	116.2	203.6	206.4
1951	30.6	46.5	48.1	117.4	234.9	209.1
1961	29.3	43.6	47.7	109.3	240.7	209.9
1971	18.9	46.5	48.0	71.8	228.7	211.9
Quebec						
1851	45.3	46.5	47.8	206.9	199.9	206.3
1861	40.0	47.2	47.3	198.6	184.4	205.5
1871	37.8	47.9	48.3	184.9	187.6	205.4
1881	36.4	48.6	48.4	177.1	188.8	205.3
1891	34.4	48.2	48.3	164.9	191.5	205.2
1901	34.9	48.0	48.3	-	-	-
1911	33.4	47.8	47.8	156.9	195.9	205.2
1921	35.1	48.6	48.3	165.0	194.3	206.2
1931	28.0	50.5	48.0	140.0	183.4	205.6
1941	23.8	52.8	48.1	120.0	183.0	205.1
1951	26.6	51.6	47.7	113.7	213.9	206.1
1961	24.6	48.2	48.3	99.0	226.9	206.9
1971	13.1	51.0	48.6	53.7	220.9	207.5
Ontario						
1851	48.3	47.2	46.0	206.3	212.9	206.9
1861	42.4	48.1	46.4	196.0	197.5	205.9
1871	37.9	48.2	47.2	177.6	195.6	205.5
1881	30.5	50.7	47.6	150.9	186.5	204.8
1891	25.3	52.5	47.7	129.5	181.2	204.3
1901	23.0	53.6	48.1	-	-	-
1911	22.9	53.6	46.9	109.1	195.2	204.3
1921	24.4	52.2	47.8	107.0	211.5	204.8
1931	19.0	52.4	47.4	82.5	211.2	205.9
1941	17.1	53.0	47.6	72.2	217.3	206.2
1951	22.6	50.5	48.0	82.4	252.4	207.2
1961	24.6	47.0	48.1	84.4	266.1	208.6
1971	15.5	49.4	48.4	57.4	246.3	208.5

APPENDIX C, Continued

Year	Standardized Crude Birth Rates Allowed to Vary Only: B/F*	F*/F	F/T	Standardized General Fertility Rates Allowed to Vary Only: LB/M*	M*/F*	IB/UM*
"West"						
1881	38.5	49.3	43.3	144.1	243.9	206.9
1891	42.7	50.9	41.0	171.6	226.8	206.8
1901	50.4	51.1	40.3	-	-	-
1911	36.9	53.4	39.3	142.3	237.1	206.5
1921	29.5	48.4	46.4	112.7	242.9	205.2
Manitoba						
1921	31.2	51.1	45.9	125.4	227.7	206.1
1931	19.5	53.7	45.8	87.6	205.0	205.5
1941	18.1	54.6	46.6	80.4	208.1	205.2
1951	23.4	50.8	47.5	87.4	243.7	207.7
1961	25.3	46.2	47.5	87.7	255.5	212.8
1971	17.7	46.9	48.3	62.5	238.7	215.3
Saskatchewan						
1921	33.6	48.6	43.9	124.2	250.1	204.7
1931	24.0	50.9	44.2	99.4	221.9	206.0
1941	19.7	52.4	45.1	85.7	212.4	205.6
1951	25.0	49.7	46.1	92.1	245.5	209.1
1961	28.5	43.0	46.5	93.2	270.8	215.4
1971	17.8	44.9	47.5	61.8	239.9	216.6
Alberta						
1921	30.7	51.0	43.4	113.0	249.7	205.9
1931	24.0	52.5	43.8	95.6	228.7	207.0
1941	20.6	53.3	44.9	83.9	224.3	206.7
1951	26.7	51.3	46.0	95.0	253.0	210.5
1961	29.0	47.5	46.6	95.9	266.8	215.7
1971	17.5	49.4	47.5	60.9	246.1	214.9
British Columbia						
1921	21.0	54.9	42.6	82.4	239.5	203.8
1931	14.9	54.8	43.0	63.4	221.1	204.4
1941	17.1	53.7	45.2	70.4	223.9	206.3

APPENDIX C, Continued

Year	Standardized Crude Birth Rates Allowed to Vary Only: B/F*	F*/F	F/T	Standardized General Fertility Rates Allowed to Vary Only: LB/M*	M*/F*	IB/UM*
1951	22.4	50.0	47.1	77.3	260.3	211.4
1961	23.6	46.4	47.4	78.4	266.4	214.4
1971	15.2	48.1	47.9	53.2	245.8	213.4

[1]Or when data becomes available.

Source: Appendix B.

APPENDIX D

Percent of Ever-Married Women Marrying at Each Age Category, by Age of Woman. Canada, 1941, 1961, 1971

Percent Age and Age at First Marriage	1941[1]	1961	1971
15-19:			
15-19	100.0	100.0	100.0
20-24:			
15-19	46.5	58.8	42.3
20-24	53.4	41.2	57.7
25-29:			
15-19	26.1	36.5	31.0
20-24	53.9	55.2	58.5
25-29	20.0	8.4	10.5
30-34:			
15-19	26.2	29.8	31.5
20-24	42.4	51.0	51.5
25-29	25.2	16.6	14.4
30-34	6.2	2.6	2.7
35-39:			
15-19	27.3	25.3	27.5
20-24	42.4	49.6	51.9
25-29	20.1	18.5	15.1
30-34	8.1	5.5	4.3
35-39	2.2	1.1	1.1
40-44:			
15-19	26.3	21.2	24.1
20-24	45.0	47.4	50.5
25-29	19.1	21.7	17.9
30-34	6.1	6.7	5.0
35-39	2.8	2.5	1.9
40-44	.8	.6	.6
45+:			
15-19	20.8	21.9	19.0
20-24	42.4	39.2	42.2
25-29	22.6	22.7	22.9

APPENDIX D, Continued

Percent Age and Age at First Marriage	1941[1]	1961	1971
30-34	8.0	8.9	8.5
35-39	3.4	3.8	3.6
40-44	1.5	1.8	1.8
45+	1.2	1.7	2.0

[1]Excludes Newfoundland.

Sources: Censuses of Canada: 1971 (cat. 92-718, table 27); 1961 (cat. 98-508, table H2). Dominion Bureau of Statistics (1944, table 1).