

**Where Have All the Children Gone?
Quebec's Fertility Decline: 1941-1991**

Catherine Krull

Department of Sociology
Queen's University
Kingston, Ontario

Frank Trovato

Department of Sociology
University of Alberta,
Edmonton, Alberta

Abstract

The province of Quebec, historically known for its unusually high reproductive levels, has in the past few decades experienced a spectacular fertility decline. This more or less abrupt decline in fertility has corresponded with the socio-economic transformation of this French-speaking province into a modern society. This paper presents a path analysis of period structural factors on fertility change in Quebec from 1941 to 1991. The results are interpreted in the context of Quebec's family policies and assess whether government can or should attempt to increase fertility levels in Quebec.

Key words: Quebec fertility, family policy, fertility determinants

Résumé

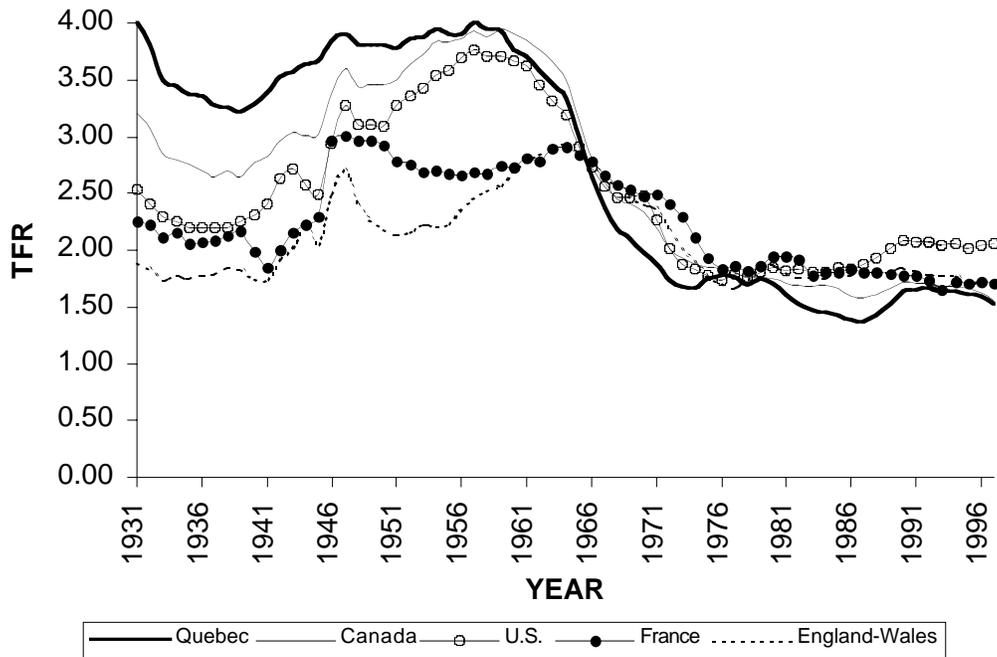
The province of Quebec, historically known for its unusually high reproductive levels, has in the past few decades experienced a spectacular fertility decline. This more or less abrupt decline in fertility has corresponded with the socio-economic transformation of this French-speaking province into a modern society. This paper presents a path analysis of period structural factors on fertility change in Quebec from 1941 to 1991. The results are interpreted in the context of Quebec's family policies and assess whether government can or should attempt to increase fertility levels in Quebec.

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Introduction

One of the most striking differences between the demographic histories of Quebec, on one hand, and western European nations, on the other, is the much higher levels of fertility of French Canadians at similar stages of demographic transition. For almost one and one-half-centuries, between 1711 and 1850, the crude birth rate in Quebec stayed above 50 per thousand population (Henripin and Peron, 1972; Henripin, 1994). Such levels of fertility are nowhere to be found in the history of European societies – or even among the poorest of contemporary developing nations (Henripin, 1954; Teitlebaum and Winter, 1985; Sardon, 1994). Although by the early part of the 1900s, there had been some fertility declines¹, the fertility rate of Quebec still exceeded that of Canada by a notable margin (Statistics Canada, 1993, 1997). For instance, while Canadians in total had an average of 29 births per 1000 persons in 1921, Quebecers were having 39 children per 1000 population (Statistics Canada, 1921). By the late 1950s, the difference in rates had narrowed considerably to 29 and 28 per 1000, respectively (Statistics Canada, 1959). With the arrival of the 1960s, birth rates dropped considerably in both Quebec and Canada as a whole. From the early sixties onwards, Quebec birth rates have fallen behind the rest of Canada, currently fluctuating at historic low points between 14 and 11 births per 1000, respectively. Figure 1 shows that Total Fertility Rates (TFR) were also higher in Quebec than in the rest of Canada until 1960, at which point they began to slide below the national level.

Figure 1
Total Fertility Rates for Quebec, Canada, United States, England-Wales
and France: 1931-1997

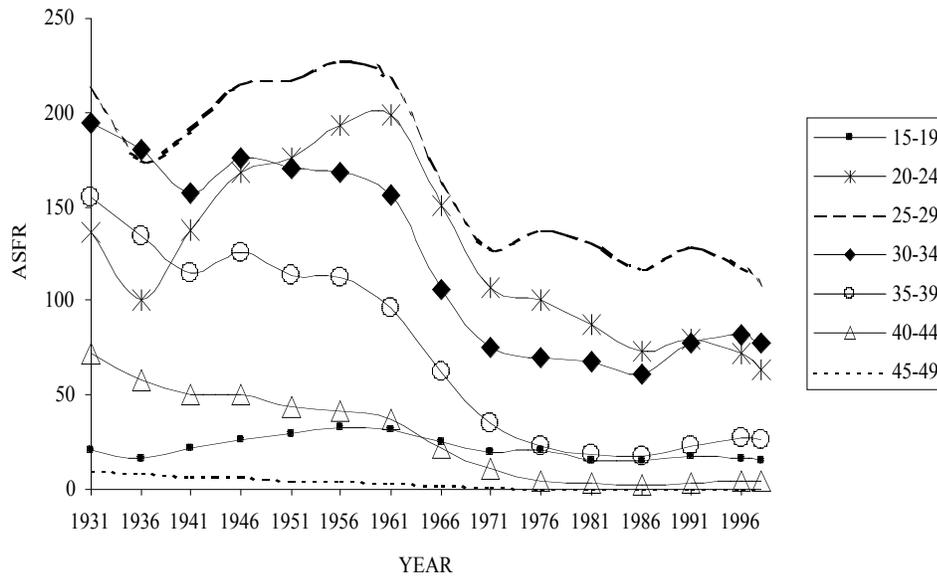


Source: Statistics Canada, 1999, 2001.

The collapse of Quebec fertility has corresponded with the transformation of this province into a modern industrial society. The rapidity and magnitude of this recent phenomenon – which occurred after the late 1950s – makes Quebec a unique setting for studying the relationship between modernization and reproductive change. This Canadian province is also of interest because of its recent experience with birth incentive policies, an attempt at population engineering that has been unprecedented in North America. This article presents a path analysis of period effects on Quebec's age-specific fertility rates from 1941 to 1991 (see Figure 2). We begin at 1941 because data for all the variables included in this study are unavailable prior to this time. Similarly, we end the analysis at 1991 because although fertility rates are available for Quebec until 1998, most of the other variables in this study come from the Canada

Census and the 2001 Census is not yet completely published. Although the period from 1991 will be interesting to study when data becomes available, the time period 1941 to 1991 is sufficient to assess the factors responsible for Quebec's fertility decline, particularly the sharp decline that occurred between 1960-1971. Moreover, this time interval adequately captures Quebec's pre-Quiet Revolution period (1941-1960) when total fertility rates were higher than found elsewhere in Canada and the post-Quiet Revolution period (after 1960) when fertility rates collapsed in this province. Since until very recently, the majority of births in Quebec have occurred within marriage, our analysis also takes into account trends in marriage rates because the extent of marriage or nonmarriage and the timing of entry into marriage, are significant determinants of overall fertility (Coale, 1969, 1973; Davis and Blake, 1954; Bongaarts, 1978).

Figure 2: Age-specific Fertility Rates for Quebec, 1931-1998



Source: Statistics Canada, Health Statistics Division, Health Status and Vital Statistics Section, 1921-2000, **Births**, Annual.

Modernization and Fertility Change¹

From a macro-social perspective, Quebec's reproductive trends have been shaped by a set of interrelated transformations over the last four centuries. The following are perhaps most salient: (1) a history of conflict with the British for the control of Canada; (2) the dominant role of the Roman Catholic Church in governing the lives of French Canadians and its eventual decline in influence; (3) the transformation of French Canadian society from a predominantly rural to an urban-industrial population; and (4) the ongoing struggle of this society to define and maintain itself as a distinct cultural entity in North America. These themes cover, to a large extent, the main features of the modernizing experience of Quebec society.

The first permanent settlement in what is now Quebec was founded in 1608. From that time until the early 1960s, government officials and the Roman Catholic Church promoted an ideology of "strength in numbers", often referred to as *la revanche des berceaux* – the revenge of the cradles (Baker, 1994; Hamilton, 1995; Krull, 1996, 2003; Lavigne, 1986). Held to be a means to overcome *Québécois* subordination to English Canada, this pronatalist strategy was essentially successful. As Henripin and Peron (1972) have noted, between 1760 and 1960, despite losing approximately 800,000 people to emigration, French Canada's population multiplied 80 times. In the same period, the world's population increased only 4 times, while that of Europe grew just 5-fold. Moreover, Quebec's exceptional reproductive rates caused concern in English Canada, for "if the French continued to reproduce at the current rate, they would eventually overrun the country" (Hamilton, 1995:137).

Until 1960, Quebec remained an essentially rural and traditional society. A range of issues not only delayed modernization, they allowed for the maintenance of high fertility rates in the province. First, in comparison to that of its neighbor, Ontario, the largest English-speaking province in Canada, Quebec's socioeconomic modernization occurred slowly (Behiels, 1986; Guindon, 1988; Laczko, 1995; Latouche, 1988). Thus, in the late nineteenth century, the Industrial Revolution took hold on Ontario; with the exceptions of Montreal and Quebec City, on the other hand, Quebec remained largely rural-agrarian well until before the outbreak of the Second World War.³ In this context, when contrasted with the rest of the industrializing world, it has been suggested that Quebec was "almost completely cut off from important nineteenth-century currents, particularly those of industrialization and female emancipation" (Wilson, 1986: 147). Delayed modernization, therefore, can be attributed to the provincial government's dedication to the Church's ideology and its vision of Quebec as a rural religious society. The influence of the Roman Catholic Church cannot be over-emphasized. Its control of education and ability to influence the government's social policies gave it decided influence over the lives of Quebecers (Gauvreau and Gossage, 1997). Not surprisingly, the Church

had a central role in promoting a pronatalist agenda and, thereby, reinforcing traditional gender roles (Clio Collective, 1987; Gauvreau, 1991; Hamilton, 1995; Lavigne, 1986). Early marriage and large families were encouraged to the detriment of individual socio-economic advancement (Clio Collective, 1987; Hamilton, 1995; Trofimenkoff, 1983). Concerned about national survival, concurrent Quebec nationalists viewed urbanization – or at least, sudden and large-scale urbanization – and other aspects of modernization as threats to the province’s unique culture and society (Hamilton, 1995). To cocoon Quebecers from the outside world, liberal ideologies were discouraged. In this context, because it would distract women from their maternal role and reduce the birth rate, feminism was interpreted as a threat to national survival.

Yet, resistance to widespread social and economic change occurring outside the province could not be sustained. By the latter half of the 1950s, the impact of these changes within Quebec were already underway because the “traditional nationalist ideology of surviving as a Catholic, French-speaking, predominantly rural people, no longer corresponded to the needs of an urban, industrial population” (Laczko, 1995:19). The watershed came in 1960 when a newly elected Liberal government, led by Jean Lesage, took power in Quebec City. Quebec had been falling economically behind the rest of Canada; and within Quebec, English-speaking Quebecers dominated the provincial economy. Committed to a different national strategy – to modernize so as to preserve Quebec’s unique culture – Lesage’s Liberals inaugurated a massive set of reforms designed to give Quebec economic and social equality with the rest of Canada, particularly Ontario. Their program was viewed as indispensable to French Canada extricating itself from Anglo economic domination within both the province and nationally, on one hand, and from the overreaching authority of the Catholic Church, on the other. Known as the “Quiet Revolution” (Thompson, 1984), a new nationalist ideology took hold, “aimed at transforming Quebec into a modern, secular, French-speaking society” (Laczko, 1995: 19).⁴

Crucial to this transformation into a modern industrial society was a well-educated population. The Lesage government, thus, ended the Church’s control over schooling, putting in place the government regulation of education. In parallel with this secularization, the educational system was expanded and modernized. In this process, for the first time in Quebec, females were entitled to the same education as males, including post-secondary education. In fact, the number of women pursuing higher education increased significantly. In the period 1961-1991, the percentage of women 20-24 years of age with a university education increased from 4.7 to 27 (Statistics Canada, 1991). A modern capitalist economy also required a labor force. Liberal reforms encouraged individuals to play an active part in such a force within Quebec (Laczko, 1995; Rousseau, 1992). They had an enormous impact on married women, who entered the labour force in significant numbers. By the early 1980s, among the employed, married women outnumbered women who lived alone⁵ (Langlois, 1992). Just as important, the number of employed married women still in their

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childbearing years rose: from 15 percent in 1961 to 74 percent in 1991 (Langlois, 1992:123). More than 50 percent of mothers with children less than two years of age were employed by the mid-1980s; and in 1996, 70.3 percent of mothers with children under the age of sixteen worked outside of the home (*Ministère de la Famille et de l'enfance*, 1999: 1). By 1996, almost two-thirds of two-parent families (64 percent) had both parents working outside the home; and 56.6 percent of women heading single-parent households were in the labour force (*ibid.*).

These diverse structural changes also promoted the values of individualism and secularism within Québécois society (Krull and Trovato, 1994). Organized religion, chiefly the once powerful Roman Catholicism, lost even further ground as church attendance decreased – compared to church attendance rates elsewhere in Canada, Quebec now has the lowest rates in the country (Guindon, 1988; Laczko, 1995). Flowing from this development, values relating to the institution of marriage have been affected⁶. Dropping from 100 per 1000 unmarried individuals in 1951 to an all time low of 37.4 in 1994 (*Bureau de la statistique du Québec*, 1996), first marriage rates have followed an accelerated pattern of decline. Indeed, by the mid-1990s, they were well below the Canadian national average of 56.7 (Statistics Canada, 1995). Not surprisingly, there occurred an accelerated rate of divorce and common-law unions (Langlois, et. al., 1992). Between 1981-1995, the percentage of Quebec couples living common-law more than tripled (Turcotte and Bélanger, 2000:106-107). More specifically, throughout the 1990s, 80 percent of first unions in Quebec were common-law; and by 1995, almost half of such unions within Canada happened in Quebec (*ibid.*: 106). Coinciding with this upsurge in common-law unions is a sharp increase in the percentage of births to unmarried women: from 16 percent in 1981 to 41 percent in 1991. The majority of these births occur within common law unions. Quebec's rate is especially high compared to that of Ontario's where, in 1991, only 17 percent of all births were to unmarried women (Belle and McQuillan, 2000:117). Quebec now has the lowest proportion of married couple families among the provinces (Statistics Canada, 1997).

Many Quebecers have preferred to restrict their fertility or opt to remain childless (Langlois, et. al., 1992; Krull, 2000). By 1982, more than 42 percent of Quebec men and women still in their reproductive ages had undergone voluntary sterilization (Fréchet, 1992: 129). Moreover, in the period 1978-1998, abortion increased from 17.9 per 100 live births to 41.8 (Statistics Canada, 2002). The 1998 figure is in fact much higher than the ratios for the same year both in Canada as a whole (32.2) and in Ontario in particular (32.0) (Statistics Canada, 2002). And one report indicates that Quebec's abortion rates are among the highest in the western world (CBC, 2000). The impact of this aspect of Quebec's modernization can be best judged by looking at the province's TFR: by 1987, it had dropped to 1.37 children per woman compared to the national rate of 1.59 (Statistics Canada, 2001). In the next decade, Quebec's TFR

increased moderately – to 1.47 in 1998 – but it remained below the accepted replacement level of 2.1.

Little doubt exists that Quebec's fertility collapse since the 'Quiet Revolution' has, among other things, corresponded with declining marriage rates. Marriage decline can be largely credited to the younger generation's perception that there are few gains to be realized through traditional matrimonial unions. While not completely eroded, this institution seems less central to the lives of many Quebecers. The decreasing desirability of marriage, particularly among the young, may be attributed to three factors: 1) rising individualism accompanied by changes in the value of children to parents; 2) changes in women's roles and aspirations; and 3) rising economic insecurities.

Theoretical Framework: Structural Change and Fertility Change

An important problem in the demographic analysis of fertility is to explain how broad scale structural factors impact on individual decisions to marry and to have children. Numerous theories have been suggested in the literature and the strength of this paper is that it attempts to incorporate these different theories into a more comprehensive theoretical framework.

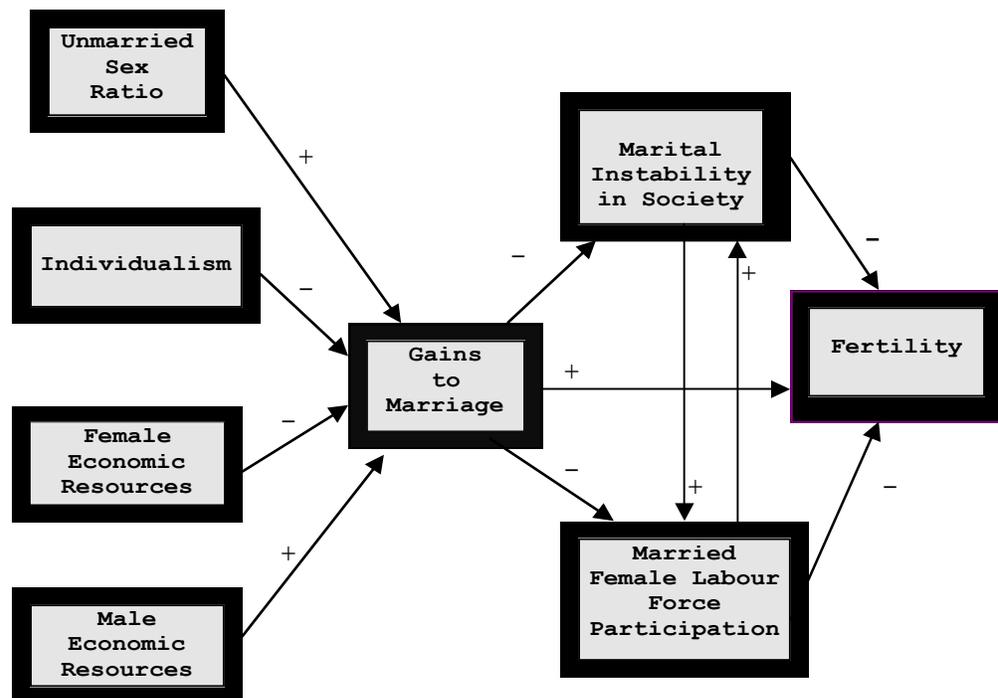
The conceptual model shown in Figure 3 provides a schematic representation of how economic, demographic and social structural factors contribute to explaining change in the perceived gains to marriage and, through this factor, increase or decrease rates of marriage and fertility⁷. We assume that as the gains to marriage decrease in society, marriage and fertility also decline. We also expect that this factor will exert negative indirect effects on fertility through its impact on marital instability and married female labor force participation (MFLFP), respectively⁸. Following Becker's (1981) theory, we also assume that when the perceived gains to marriage are strong in a society, marital disruption will be relatively infrequent, and this is conducive to couples having large families. When the gains to marriage are perceived to be low and the probability of divorce high, couples will be more likely to desire small families and to therefore place greater emphasis on controlling fertility. This is particularly true for women, who tend to be the worse off economically after a marriage ends and who have traditionally maintained custody of their children (Richardson, 2001: 225; Pask, 1993: 187).

According to Becker (1981), the gains to marriage for men and women are highest under a traditional sexual division of labour. Under such conditions, married female participation rates tend to be quite low, and fertility is generally high. Conversely, in a regime of reduced perceived gains to marriage, women are more likely to be employed, seek careers, and are keenly interested in having few, carefully spaced children, with the aid of effective birth control. The costs

of having a child, which can often include forgone or diminished income and career opportunities for wives, are weighed against the benefits of having a child (Becker, 1981; Butz and Ward, 1979; Easterlin, 1980, 1975).

In addition to having a negative direct influence on fertility, marital instability can also indirectly curtail fertility through its positive effect on MFLFP. When the probability of divorce is high in society (high divorce rates), women are less likely to give up their economic independence upon marriage, tending to remain in the labor force (high MFLFP), which acts to depress fertility. MFLFP also indirectly affects fertility through its effect on marital instability. Women who are economically secure through employment will be more likely to leave unhappy marriages than women who are not economically independent, which again has an inhibiting effect on fertility.

Figure 3
Conceptual Model of Selected Determinants of Fertility Change
for Quebec: 1941-1991



The major factors that are thought to affect the perceived gains to marriage are demographic, social and economic. The demographic factor in this analysis is the sex ratio of unmarried males to unmarried females. Imbalances in the unmarried sex ratio can affect the perceived gains to marriage (Guttentag and Secord, 1983; Veevers, 1994). According to this theory, as the number of unmarried males increased relative to the number of unmarried females (a high sex ratio), there was more to gain through marriage for both sexes. This occurred for two reasons. First, when there was a shortage of unmarried women, men who married enjoyed a higher status in society (Guttentag and Secord, 1983:19). They also received the sexual, domestic and child care services of their wives. Thus, men gained more through marriage than by remaining single and as such, they tended to be more committed to their marriages (ibid.). Second, since the pool of potential husbands was ample, women had more to gain economically through marriage (Veevers, 1994; Guttentag and Secord, 1983). Under these conditions, getting married would be more attractive than either cohabitation or remaining single.

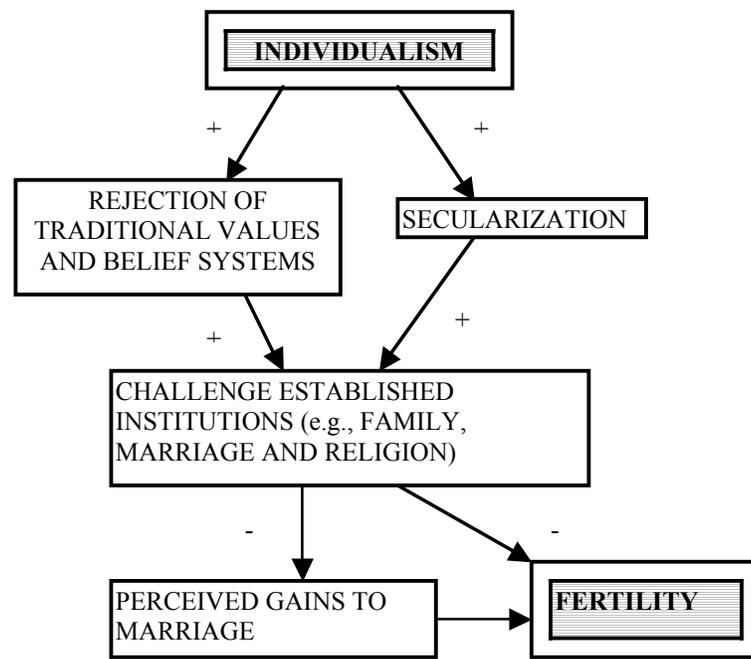
Conversely, in a context where there are more unmarried women in the prime marriageable ages than unmarried men (a low sex ratio), both sexes may have less to gain from marriage (Heer and Grossbard-Shechtman, 1981). There are fewer perceived gains for men because they can reap many of the benefits of marriage without committing to a spouse (Goldscheider and Waite, 1986: 92-93). "Sexual libertarianism would be the prevailing ethos, shared by men and women alike, although, because of the surplus of women, the options would be greater for men" (Guttentag and Secord, 1983: 20). At the same time, women being less assured that they would find a potential husband, would be more likely to pursue educational and career opportunities to ensure economic security. Achieving economic independence not only increases women's sense of autonomy but it decreases the necessity of marriage; living common-law or remaining single become viable alternatives (Guttentag and Secord, 1983; Turcotte, 1998; Veevers, 1994). Moreover, South and Lloyd (1992) found that under conditions of low sex ratios and consequently fewer gains to marriage, the probability of divorce is quite high. Consequently, "the more fearful the wife will be that she will be abandoned by her husband and force to rear her children alone" (Heer and Grossbard-Shechtman, 1981: 58). It is not surprising then that women under these conditions would be more likely to limit the number of children that they have or even to opt to remain childless.

Another major determinant of the gains to marriage is 'individualism'. Modernization changes the orientation of a society, from one primarily based on collectivism to one primarily characterized by individualism (Lesthaeghe and Surkyn, 1988). As shown in Figure 4, rising individualism contributes to secularization and the weakening of traditional values and belief systems. The value of children to parents also shifts from a focus on quantity to one based on quality, thereby inducing couples to desire fewer children (Aries, 1980; van de Kaa, 1987). Thus, as a process of modernization, secularization challenges

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established institutions like marriage, family and religion; part of this also entails a growing sense among people that small families are desirable to large ones.

Figure 4
Conceptual Map of the Relationship between Individualism and Fertility



The economic factors considered in our model are the economic resources of men and women. Drawing on microeconomic theory, the gains to marriage for men and women are maximized when there is a sexual division of labor, whereby men trade their economic resources for the domestic services of women (Becker, 1981; Easterlin, 1980; Openheimer, 1979). Accordingly, the perceived gains to marriage should reduce as the earning power of women relative to men increases, or when men experience economic difficulties due to fluctuations in the market. In both cases, the advantages of traditional marriage based on a sexual division of labor are diminished significantly.

Data and Methods

The data for this study consist of a tabulation of age-specific fertility rates for Quebec province as recorded in Vital Statistics publications for 1941 to 1991 (Statistics Canada, *Births*, 1941-1991). Several variables are included as proxies for the various concepts included in our theoretical model. Except where stated, the age-specific data for the predictors of fertility were obtained from the quinquennial Censuses of Canada from 1941 to 1991. Both year and age are included in the analysis to control for the time trend and change in age composition. The age groupings are as follows: 20-24, 25-29, 30-34, 35-39 and 40-44.⁹ Estimates, derived from graphic interpolation based on a third order polynomial function, were used for those years that data was unavailable (i.e., there was not a general Census in 1946, only the Prairie Provinces were enumerated).¹⁰

The three concepts that directly affect fertility in our model are married female labour force participation (MFLFP), marital instability (divorce) and the perceived gains to marriage. The proportion of married women who were employed at the time of the Census per 1000 married women was used to operationalize MFLFP. The marital instability concept was operationalized by the proportion of the married female population who was divorced at the time of the Census.¹¹ A relatively high proportion divorced indicates an overall weaker commitment to marriage and less confidence in marriage as a life long partnership. Both of these situations would have inhibiting effects on fertility. A low proportion of women in the divorced state would reflect a stronger commitment in the population to marriage. Age-specific female marriage rates were used as a proxy measure of the gains to marriage concept. A high marriage rate suggests positive gains to marriage; a low marriage rate indicates the opposite.

The predictors of the gains to marriage include the unmarried sex ratio, individualism, female economic resources, and male economic resources. The unmarried sex ratio is the number of age specific unmarried males to the number of age specific unmarried females. A high ratio (above 1.0) indicates a surplus of unmarried males, while a low ratio (below 1.0) indicates a surplus of unmarried women.¹²

The concept of 'individualism' was operationalized with factor analysis of the following variables: (1) the proportion of men in the census who reported "no religion"; (2) the proportion of women in the census who reported "no religion"; (3) the proportion of women with post-secondary education; (4) the proportion of men with post-secondary education; and (5) the proportion of the population reporting to have an urban residence.¹³ The factor scores from the combined index of individualism were used in the multivariate analysis.

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Economic influences on the gains to marriage include male and female economic resources. Male unemployment rates and female-to-male average income ratios¹⁴ were computed as measures of male and female economic resources, respectively. Economic gains to marriage should be highest when male unemployment is low and female-to-male income ratios are well below 1.0. Conversely, when male unemployment is high and income ratios are closer to 1.0 (income equity), the gains of marriage should be low. In addition to its effect on marriage rates, male unemployment is assumed to also affect fertility indirectly through MFLFP. Historically, married women would be pulled into the labour force during economic recessions and pushed out when the economy recovered (Armstrong, 1990; Oppenheimer, 1979, 1994; Pryor, 1984; Rashid, 1986; Waite, 1981). Thus, while it is possible for the gains to marriage to be high, temporary fluctuations in the economy might make it necessary for married women to work. Even though employment may be temporary, it could still limit fertility.

To estimate the specified relationships in Figure 3, regression equations were computed using Ordinary Least Squares (OLS). Due to the existence of reciprocal causation between married female labour force participation and divorce, Two-Stage Least Squares regression was applied to calculate the coefficients leading to these two variables¹⁵ (see Namboodiri, Carter and Blalock, 1975:492-532). Standardized coefficients (b's) from all the regressions were used to calculate path coefficients (*P*'s). The path coefficients are standardized; they range between -1 and +1. The larger value of a coefficient, the greater its impact on a dependent variable.

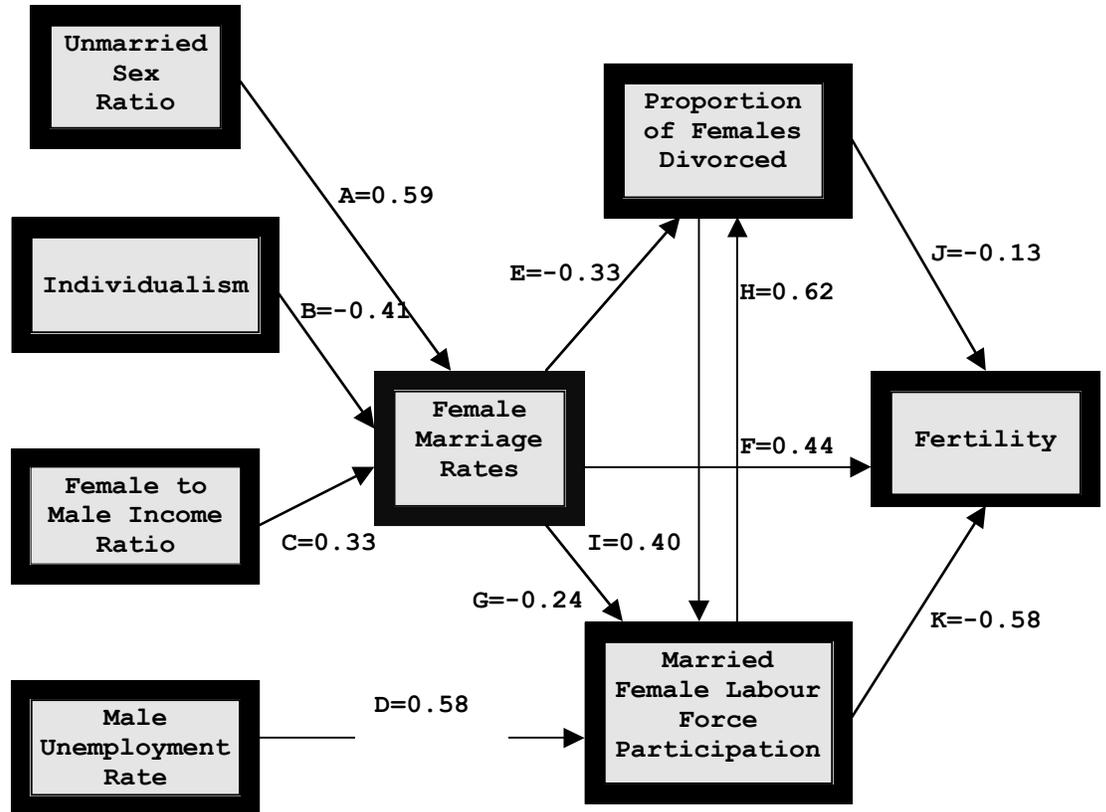
Results

Table 1 shows the indirect, direct and total effects, and Figure 5 presents the path coefficients that were statistically significant.¹⁶ The results demonstrate that female marriage rates (path F = .44), the proportion of divorced females (path J = -.13), and married female labour force participation (path K = -.58) had significant direct effects on age specific fertility rates. These coefficients indicate that high marriage rates, low married female labour force participation and low divorce rates directly increase fertility rates in Quebec over the course of the study period. Conversely, low marriage rates, high married female labour force participation and a high proportion of divorced females would decrease fertility. An overall R² of .96 was obtained when marriage rates, divorce, MFLFP, age and year were regressed on fertility. Female marriage rates (R² = .58), MFLF participation (R² = .13), and divorce (R² = .006) explain 72 percent of the overall variance. Age and year account for the remaining 24 percent.

Table 1
Indirect, Direct and Total Effects on Fertility for Quebec, 1941-1991

Variables	Indirect Effects	Direct Effects	Total Effects	
Marriage on Fertility	(E*J)	0.0429	(F) 0.44	0.718
	(E*I*K)	0.0765		
	(G*K)	0.1392		
	(G*H*J)	<u>0.0193</u>		
		0.2779		
Married Female Labour Force Participation on Fertility	(H*J)	-0.0806	(K) -0.58	-0.6606
Divorce on Fertility	(I*K)	-0.232	(J) -0.13	-0.362
Unmarried Sex Ratio on Fertility	(A*F)	0.2596	---	-0.4236
	(A*E*J)	0.0253		
	(A*E*I*K)	0.0452		
	(A*G*K)	0.0821		
	(A*G*H*J)	<u>0.0114</u>		
	0.4236			
Individualism on Fertility	(B*F)	-0.1804	---	-0.2944
	(B*E*J)	-0.0176		
	(B*E*I*K)	-0.0314		
	(B*G*K)	-0.0571		
	(B*G*H*J)	-0.0079		
	-0.2944			
Female to Male Income Ratio on Fertility	(C*F)	0.1452	---	0.2370
	(C*E*J)	0.0142		
	(C*E*I*K)	0.0253		
	(C*G*K)	0.0459		
	(C*G*H*J)	<u>0.0064</u>		
	0.2370			
Male Unemployment on Fertility	(D*F)	-0.3364	---	-0.3832
	(D*E*J)	<u>-0.0468</u>		
		-0.3832		

Figure 5
Computed Model of Selected Determinants of Fertility Change
for Quebec: 1941-1991



Note: Effects shown are net of age and period effects.

As shown in Figure 5, female marriage rates also indirectly affect fertility through both female divorce and married female labour force participation. Conditions of high marriage rates and low divorce were conducive to high fertility in Quebec (paths E and J). Likewise, when marriage rates were high and divorce was relatively rare, fewer women were engaged in the labour force, all of which contributed to increased fertility (paths E, I and K). When marriage rates were high, fewer married women were employed, which again was conducive to higher fertility levels (paths G and K). Finally, high fertility levels in Quebec were promoted by high marriage rates, low female labour force participation and relatively few divorces (paths G, H and J). Combining the total

indirect effects (.28) of marriage on fertility with its direct effect (.44), female marriage rates have the strongest overall total effect (.72) on fertility change in Quebec.

Concerning the predictors of marriage rates, unmarried sex ratios, individualism and female-to-male income ratios had significant direct effects and, along with age and year, explained 90 percent of the variance in the marriage rates. Unmarried sex ratios had the largest direct effect on female marriage rates, indicating that marriage rates are highest when there is a surplus of eligible males and lowest when there is a surplus of eligible females (the marriage squeeze). Individualism had the next strongest effect on female marriage rates. This finding indicates that individualism is inversely related to marriage.

Unexpected results were obtained for the economic variables. The results indicate that as women's average income increases relative to males, marriage rates also tend to increase. Although male unemployment had a negative effect on female marriage rates (-.16), the result was not significant at the .05 level. Yet, male unemployment did have a significant positive effect on MFLFP (path D = .58) indicating that when male unemployment rises, more married women work in the labour force, possibly to supplement family income.

In terms of total effects on fertility, marriage rates had the strongest effect (.72), followed by MFLFP (-.66), sex ratio of unmarried individuals (.42), male unemployment (-.38), divorce (-.36), individualism (-.29) and finally female to male income ratio (.24).

Discussion

From this macro-level analysis, we may conclude that long-term shifts in Quebec fertility between 1941 and 1991 can be attributed to changes in divorce, female labour force participation, and female marriage rates. Divorce and MFLFP had an expected negative impact on period fertility. Of these variables, the strongest influence was due to change in marriage: when marriage rates increased, fertility rates climbed; and when it decreased, fertility would drop. This accords with the analysis of Caldwell, Fréchet and Thibault (1993) who found a strong positive relationship between female marriage rates and total fertility in Quebec between 1961 and 1989.

In the present investigation, the unmarried sex ratio had a strong positive influence on female marriage rates, indicating that marriage rates respond to changes in the demographic composition of the unmarried population. That is, when there were more eligible males in Quebec than eligible females, early marriage would be perceived by both genders as advantageous. On the other hand, when sex ratios in the prime marriageable ages declined (as it has in the past few decades), the perceived gains to marriage weaken and marriage rates

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would drop. This is congruent with the theory of sex ratio imbalances as reported by Veevers (1994) for Canada, and by Guttentag and Secord (1983) for the United States.

Our index of individualism is inversely related to female marriage rates, representing one of the most important by-products of modernization on Quebec society. The modernization process has weakened the gains to marriage by shifting functions normally subsumed under family and marriage to other sectors of the society, reducing both the centrality and the reward value of marriage for the individual. The substantial decline in Quebec fertility in recent years is to a large extent the result of rising individualism, and its impact on liberalizing personal choices regarding marriage and childbearing. That is, as Quebec experienced modernization gradually, and then more intensively from the onset of the Quiet Revolution, people increasingly have adopted an individualistic ethos to life and a generalized detachment, perhaps even distrust, of traditional institutions, including church and marriage (Aries, 1980; Lesthaeghe and Surkyn, 1988). In this context, alternatives such as remaining single or cohabiting, have gained in popularity (Langlois, et al., 1992: 111). Under the new ethos of individualism, fertility decisions are predicated by individual choice, based on personal considerations.

Male unemployment had no significant relationship to female marriage rates, though consistent with expectations, the coefficient is negative, in accord with the hypothesis that reduced male economic resources decrease the desire for matrimony. Male unemployment has a substantial indirect negative effect on fertility through its effect on married female labour force participation (i.e. as male unemployment rates increase, married women enter the labour market in greater numbers, and fertility declines). The effect of male unemployment on fertility also operates indirectly in explaining fertility change through divorce (positive), the latter serving to reduce fertility. Through these indirect effects, the male unemployment variable emerged as the strongest overall determinant of fertility change in Quebec between 1941 and 1991.

Female relative earning power has a positive effect on female marriage rates (as female earning power increases, marriage rates increase). This result may be viewed as unexpected if female trading power is conceived strictly in terms of domestic activities. However, rising female relative income may represent a stimulus for matrimony by males who would gain financially from the economic contributions of their spouses.

Indirectly, female earning power raises fertility through its positive effect on marriage rates. As female earning power increases, men and women would gain more in marriage, the latter promoting fertility. Generally, economic contributions by both males and females are important determinants of fertility levels, though not necessarily in equal degrees (Caldwell, Fréchet and Thibault, 1993). In the present case, married female participation in the labour force has a

stronger and negative effect on fertility (Butz and Ward, 1979). As women participate more in economic activities, their value of time increases and therefore their opportunity costs for childbearing rise substantially, leading to low overall fertility.

Although the model presented here cannot provide all of the answers, it does point to some very crucial factors that are correlated with fertility decline in Quebec. The context of this analysis also raises the question whether a government can realistically alter the course of sub-replacement fertility. Our analysis suggests that the factors impinging on fertility and marriage may not be within government control but dependent on private behaviour. This conclusion is also substantiated by Quebec's recent failure to alter its fertility levels through birth incentive policies. In 1988, the Quebec government implemented three programs aimed at elevating fertility: allowances for newborns that, after amendments, paid women \$500 for a first birth, \$1000 for a second, and \$8000 for a third and each subsequent birth; a family allowance for all children under 18 years; and an additional allowance for children under age 6 (*Regie des rentes du Quebec*, 1994). Moreover, with the birth of a third or subsequent child, parents received 27 weeks of paid leave, plus 15 weeks of federal maternity benefits. Families with two or more children under age 18 qualified for a \$7000 interest-free loan to help purchase a first home. Overall, Quebec families received almost \$4 billion annually in direct and income tax assistance from the provincial and federal governments (ibid.).

By the mid-1990s, given Quebec's continuing low TFR, the incentive policies were not producing the desired effects.¹⁷ Although there had been an initial increase in the TFR from 1.49 children per woman in 1988 to 1.72 in 1990, total births after 1990 decreased. Consequently, families with three or more children remained uncommon. Having remade Quebec by urbanizing and industrializing its society, the Quiet Revolution was now driven by a new set of values. Mirrored in the desire of younger Quebecers for alternative life styles and self-actualization instead of early family formation and childbearing, post-Quiet Revolutionary Quebec possesses a modern society (Krull, 2003). In Hamilton's (1995) piquant comment, "the simple slogan of the Comité de lutte pour l'avortement libre et gratuit – 'We will have the children that we want to have' – expresses what most women appear now to be doing" (p. 142). Birth incentive policies favoring three or more children were increasingly viewed by modern Quebecers as contrary to the needs of their families (Saint-Pierre and B.-Dandurand, 2000).

Admitting defeat, the Quebec government jettisoned its pronatal policies in 1997 and put in their place policies designed to strengthen family life (Baril, et al., 2000). These innovative policies had various objectives, which included increasing government assistance to low-income families, facilitating a balance for parents between home and work responsibilities, and promoting child development and equal opportunities for all concerned (*Ministère de la Famille*

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et de l'Enfance du Québec, 1999: 4). A pillar of Quebec's new family policies centered on the provision for a network of government-regulated, highly subsidized (users pay just \$5.00 per day; the government the rest) day-care facilities. The purpose of these facilities is to offer a quality educational program for children from birth to kindergarten age (Krull, 2001). Quebec is at present the only provincial jurisdiction in Canada to provide universal subsidized day-care; and this innovative program has recently been augmented by ten innovative pilot projects designed to provide evening and 24-hour day-care service, seven days a week (Dougherty and Jelowicki, 2000; Peritz, 2000).

Like many other modern societies, Quebec currently faces a low birth rate and an aging population. Quebec's uniqueness lies not so much with its current fertility levels, which are no longer the lowest in Canada, but with the dramatic way in which total fertility rates decelerated in a relatively short time period. Although Quebec nationalists have expressed grave concerns, even anxiety, over Quebec's ability to sustain itself as a French-speaking society given its present fertility levels¹⁸, it is unlikely the province will witness above replacement fertility rates anytime in the near future. Clearly, government cannot control the factors that accounted for Quebec's fertility decline and it is doubtful that implementing policies with this goal in mind could substantially rectify its current levels. On the other hand, Quebec's new family policies, currently the most innovative in Canada, demonstrates Quebec's commitment to families in this province.

End Notes:

1. Although fertility was significantly higher in Quebec than the rest of Canada, it nonetheless had been declining since the 1850s. However, it did so at a much slower rate than it did for the rest of Canada. From 1851-1921, the number of births per woman in Quebec decreased by 23 percent compared to a 51 percent decrease in the rest of Canada (Henripin and Peron, 1972; Statistics Canada, 1993).
2. The following is informed by Krull, 2003.
3. Quebec society was not completely immune to the modernization process prior to 1960. For example, urbanization was taking place but at a much slower pace than it did for the rest of Canada.
4. Although the vision of a Quebec society based on the philosophy of liberalism and secularization was reflected in government-instituted policies that promoted industrial development and urban growth (Behiels, 1986), it is important to note that the changes that occurred were part of a greater movement and may have occurred without intervention by the Lesage government (Ingelhart, 1977; Lesthaeghe, 1983).

5. Although women's representation in the labour force has increased remarkably since 1960, the types of jobs they held changed very little; the majority of women continue to be employed in the clerical, health, teaching and service sectors (Clio Collective, 1987).
6. See Dagenais (2000) for an insightful assessment of the impact of changing values on modern family structures.
7. We also assume that as the perceived gains to marriage decrease in society, the prevalence of common-law unions increases (Turcotte and Bélanger, 2000). Unfortunately, we were not able to include this variable into our analysis since data for common-law unions by age, gender and province are unavailable for the majority of the period under study (1941-1991).
8. We also assume that as the perceived gains to marriage decrease in society, the prevalence of common-law unions increases (Turcotte and Bélanger, 2000). Unfortunately, we were not able to include this variable into our analysis since data for common-law unions by age, gender and province are unavailable for the majority of the period under study (1941-1991).
9. The age group 15-19 was not included in the analysis due to too few cases.
10. Most of the variables included in the path analysis required some form of estimation for certain years when the data was either not recorded or was not recorded by 5 year age groups. Although the estimation procedures used are common practice, they obviously are not as accurate as observed data. This may have introduced degree of error in the statistical model. However, graphic presentation of each variable (using the estimated and observed data) indicates the expected trend. Furthermore, the overall empirical results are quite reasonable in the light of the expectation from the theories applied.
11. Age specific divorce rates would have been preferred for the analysis, but these data are only available after 1971, necessitating the use of prevalence measures.
12. In using five-year age groups to calculate the unmarried sex ratio, we may not have completely captured gender differences in the age at marriage. Moreover, undercounts in the census of males between the ages of 20-24 may also affect this measure.
13. Male unemployment rates and the female to male income ratio were also included in the original factor analysis but they were not included in the principal factor. After preliminary analysis, it was decided to enter these two variables separately into the model, rather than as one factor, because it

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is theoretically expected that these two variables have opposite effects on the perceived gains to marriage.

14. The female to male average employment income ratio is the age specific average female employment income divided by the age specific average male employment income. The income for each period in this analysis was standardized using the 1991 Consumer Price Index.
15. The presence of reciprocal causation violates an assumption of OLS because the error term will be correlated with one of the predictor variables, which leads to biased coefficients (Norusis, 1993:236). Two-Stage Least Squares regression was therefore applied for this part of the model. Regressing MFLFP and female marriage rates on divorce consisted of the following two steps: (1) female marriage rates and male unemployment were regressed on divorce and the predicted values were saved in a new series named 'new divorce'; (2) 'new divorce', male unemployment rates and female marriage rates were regressed on MFLFP. A similar procedure was done in order to calculate the coefficients leading to divorce: (1) female marriage rates and male unemployment rates were regressed on MFLFP and the predicted values were saved in a new series named 'new MFLFP'; (2) female marriage rates and 'new MFLFP' were then regressed on divorce.
16. It should be noted that the obtained Durbin Watson statistic for all the equations were above the specified lower limit at .01 significance, indicating that the null hypothesis of zero autocorrelation in the residuals should not be rejected (see Table D-5C, in Jan Kmenta's *Elements of Econometrics*, 2nd edition, 1986,p.768). However, the value of the test statistics was not above the specified upper bound. Thus, the test is inconclusive and we cannot be statistically certain that the errors are not correlated. However, when differencing was used on the data, the Durbin Watson statistics did not differ that much, suggesting that autocorrelation is minimal. Moreover, a visual inspection of the residuals was also done to check for autocorrelation.

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